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ABSTRACT

In response to the increasing use of state-based performance indicators for postsecondary education, a study was undertaken to review the reliability and validity of state-level indicators in the Florida Community College System (FCCS). Data were collected from literature reviews and the 1996 FCCS Accountability Report, detailing outcomes for 17 accountability measures for the 1993-94, 1994-95, and 1995-96 academic years. Information was also gathered on institution size, program mix, and expenditures for the 28 colleges in the System. In the first phase of the study, the progress made by the colleges on the 17 accountability measures was determined, indicating that progress was shown on only 8 of the measures, including 6 related to retention and success and 2 related to academic performance. In the second phase, the relationship between the measures and institutional characteristics was explored. This analysis revealed that, for associate in arts (AA) programs, higher faculty salaries, a higher percentage of total expenditures spent on instruction, and a higher full-time equivalency (FTE) count were related to higher retention and success. For associate in science (AS) programs, only higher overall FTE and a higher percent of postsecondary vocational FTE students were related to higher retention and success. Thirty-eight sets of tables showing FCCS outcomes for AA and AS programs and a list of variables used in the study are attached. (BCY)

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The Florida Community College Accountability Plan: An Analysis of Institutional Characteristics and Success at Meeting State Defined Performance Measures

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ABSTRACT

The Florida Community College Accountability Plan: An Analysis of Institutional Characteristics and Success at Meeting State Defined Performance Measures

State-based performance indicators for postsecondary education are rapidly becoming the hallmark of the 1990's. A number of states now have some form of performance indicator legislation enacted and with each legislative session the number increases. This paper studies the reliability and validity of accountability measures and performance indicators established at the state-level for a system of community colleges and reviews the appropriateness of the measures for systemic decision making and public reporting. This paper serves as a challenge to the institutional research community to take an active role in the study of measures defined as instruments of public higher education policy.

The Florida Community College Accountability Plan: An Analysis of Institutional Characteristics and Success at Meeting State Defined Performance Measures

1. Introduction and Perspective

State-based performance indicators for postsecondary education are rapidly becoming the hallmark of the 1990's. By 1993 over one-third of the states had some form of performance indicator legislation enacted (Bogue, Creech & Folger, 1993) and with each legislative session since the number has increased. Discussion at the state level has begun to shift toward funding the enterprise based on outcomes, effectiveness, and efficiency (Gather, Nedwek, and Neal, 1994). Significant attempts at operationalizing these grand concepts and weaving them into the fabric of planning, policy and budget development were given license in several states during the 1996 legislative session. In the 1994 Education Commission of the States publication Charting Higher Education Accountability (Ruppert, 1994) a case study of ten states indicated that the adoption of state-level performance indicators was most often done rapidly, relied on existing data and was usually driven by legislative initiative. This report implied that few states have accomplished the analysis necessary to define measures appropriate for systemic decision making and public reporting.

The Florida Community College System has had an effective system-level data collection effort in place for over two decades. Florida is one of the States that has moved aggressively to adopt state-level performance indicators. The 1994 Accountability Plan for Florida Community Colleges clearly established the relationship of the accountability measures, which met legislative requirements, with the mission and five-year master plan for the Community College System. The Accountability Plan established an oversight process and set goals for each of the accountability measures system-wide and for each campus. Seventeen measures encompassing five majors by seventeen indicators have been collected for three years and individual goals for each institution on each indicator established. This study was conducted to explore whether these measures are appropriate for systemic decision making and public reporting.

2. Purpose

The purpose of this paper was to study the reliability and validity of accountability measures established at the state-level for a system of community colleges and review the appropriateness of the measures for systemic decision making and public reporting.

3. Literature Review and Background

There has been significant discussion on the development of performance indicators and their use in higher education. Among these extant models are: the National Association of College and University's Financial Self-Assessment Workbook (1987); Performance Measurement Systems for Higher Education (Kidwell and Long, 1995); Strategic Indicators for Higher Education (Taylor, Myerson and Massy, 1993); and Measuring Up: The Promises and Pitfalls of Performance Indicators (Gather, Nedwek and Neal, 1994). Currently in progress is the NACUBO Benchmarking Project, which is focused on developing quantitative measures to set as a point of reference and standard for basic operations. However, most of the analysis and literature on the development of state-level performance indicators describes a pattern of implementation with little prior conceptual development and a focus on inter-institutional comparison (Bogue, Creech & Folger, 1993). A 1994 Education Commission of the States study found that performance indicator initiatives in the various states contain many of the same measures (Ruppert, 1994). Most of the states studied used 20 or so indicators that were collected by a governing board and reported in a tabular form. The indicators most commonly used reflected some measure of: instructional inputs; instructional process and use of resources; instructional outcomes; efficiency and productivity; diversity and access; articulation; and relation to state needs.

In the 1987 revision of, Financial Self- Assessment: A Workbook for Colleges and Universities, (Dickmeyer & Hughes) the concept of an overall institutional equation, defined in terms of performance indicators, was emphasized. It was strongly implied in this volume that there were ranges within the various indicators presented that indicated good, moderate or poor performance on a given indicator. It was also implied, in this major work of a standing NACUBO committee, that a certain equation could be inferred for an institution from a

combination of these indicators. It was further implied that this unique equation could provide an indication of institutional health, and areas of institutional strength and weakness. The most noticeable addition to this line of thinking was put forth by Mary Sapp (1994) in the AIR Professional File document, Setting a Key Success Index Report: A How to Manual. Institutions are complex, and within this paradigm there are a number of possible equations. Further research must be done in defining the use and efficacy of performance indicators, particularly, if they are to be used as major vehicles in defining and enforcing state policy.

Under Section 240.324 Florida Statutes (1991, the State Board of Community Colleges and the community colleges boards of trustees were to "develop and implement a plan to improve and evaluate the instructional and administrative efficiency and effectiveness of the State Community College System." The law specifically mandated that the accountability planning process address the following issues:

a) graduation rates of Associate of Arts (AA) and Associate of Science (AS) degree-seeking students compared to first-time enrolled students seeking the associate degree;

b) minority student enrollment and retention rates;

c) student performance, including student performance rates on college-level academic skills tests, mean grade point averages for community college AA transfer students, and community college student performance on state licensure examinations;

d) job placement rates of community college vocational students; and,

e) student progress by admission status and program.

In response to this legislative initiative, the Florida State Board of Community Colleges adopted an Accountability Plan in 1994, which established the relationship of accountability measures, which met the legislative requirements, with the mission and five-year Master Plan for the community college system. The Committee on Accountability and Effectiveness, a standing committee under the State Board of Community Colleges Program and Planning Committee defined these accountability measures. The 1994 Accountability Plan also provided a framework within which the accountability planning process would take place, established

and oversight process, and set System goals for each of the accountability measures. In accordance with the legislation, each community college developed an Institutional Accountability Plan and established Institutional Five-Year Goals for each of the seventeen defined measures. Table I shows details for each of the seventeen accountability measures that operationally define the Accountability Plan.

Table 1

Definition of the Florida community college accountability measures

- Associate in Arts Retention Measure - The percent of associate in arts degree students who have earned 18 credit hours, that were retained or graduated four years after the date of initial enrollment. (label = Retention Rate A.A.)
- Associate in Arts Success Measure - The percent of associate in arts degree students who have earned at lest 18 credit hours, have graduated, were retained in good standing, or left in good standing four years after the date of initial enrollment. . (label = Success Rate A.A.)
- Associate in Science Retention Measure - The percent of associate in science degree students who have earned 18 credit hours that were retained or graduated four years after the date of initial enrollment. (label = Retention Rate A.S.)
- Associate in Science Success Measure - the percent of associate in science degree students who have earned at lest 18 credit hours, have graduated, were retained in good standing, or left in good standing four years after the date of initial enrollment. . (label = Success Rate A.S.)
- Postsecondary Vocational Certificate Retention Measure - The percent of postsecondary vocational certificate program students who have earned 18 credit hours, that were retained or graduated four years after the date of initial enrollment. (label = Retention Rate P.S.V.C.)
- Postsecondary Vocational Certificate Success Measure - The percent postsecondary vocational certificate program students who have earned at lest 18 credit hours, have graduated, were retained in good standing, or left in good standing four years after the date of initial enrollment. . (label = Success Rate P.S.V.C.)

- Associate in Arts Transfer Student Performance - The percent of students, having completed their entire associate in arts degree program at a community college in which they initially enrolled, who after one full year at a university have a GPA at or above 2.5 on a 4.0 scale. (label - GPA Performance A.A. 2.5 & Above)
- Licensure Pass Rate Measure - The percentage of associate in science degree program students who, after completing their degree program, passed the licensure exam for their respective vocational program. (label = State Licensure Pass Rate)
- Placement Rate Measure - The percentage of associate in science degree program students who, after completing their degree program, were found in the Florida Education and Training Placement Information Program pool of employed and were placed in an occupation related to their instruction. (label = Vocational Program Placement)
- College Preparatory Reading Performance Measure - The percentage of first time in college (FTIC) students who tested into and enrolled in reading preparatory courses who have successfully completed the program within two years. (label = College Prep Success Rate - Reading)
- College Preparatory Writing Performance Measure - The percentage of first time in college (FTIC) students who tested into and enrolled in writing preparatory courses whom have successfully completed the program within two years. (label = College Prep Success Rate - Writing)
- College Preparatory Math Performance Measure - The percentage of first time in college (FTIC) students who tested into and enrolled in math preparatory courses who have successfully completed the program within two years. (label = College Prep Success Rate - Math)
- College Preparatory Retention Measure - The percent of students who successfully completed a college preparatory program and have subsequently graduated, or who are still enrolled in an associate in arts degree program, four years after the date of initial enrollment in the A.A. degree program. (label = College Prep Retention Rate A.A.)
- College Preparatory Success Measure - The percent of students who successfully completed a college preparatory program and have subsequently graduated, or who are retained in

good standing, or who have left in good standing, four years after the date of initial enrollment in the A.A. degree program. (label = College Prep Success Rate A.A.)

- Associate in Arts CLAST Measure, College Preparatory Students - The percentage of students who successfully completed a college preparatory program, and have completed 60 or more college credits at a specific institution, who have met the College Level Academic Skills Test (CLAST) passing standards. (label = CLAST Performance College Prep)
- Associate in Arts CLAST Measure, Non-College Preparatory Students - The percentage of students who, were admitted as regular students, who have completed 60 or more college credits at a specific institution who have met the College Level Academic Skills Test (CLAST) passing standards. (label = CLAST Performance Non-College Prep)
- Associate in Arts CLAST Measure, All Students - The percentage of students who have completed 60 or more college credits at a specific institution who have met the College Level Academic Skills Test (CLAST) passing standards. (label = CLAST Total Performance)

With the approval of the 1996 Accountability Report of the Florida Community College System by the State Board of Community Colleges three years of data on the accountability measures at institutional level were available for analysis. Most of the measures reflect outcomes related to activity at the institutions for four years prior. An analysis examining the characteristics of institutions successful in meeting their goals, and of the usefulness of the goals themselves, would most appropriately be accomplished after year five.

4. Data Sources

The 1996 Accountability Report of the Florida Community College System provides data on 17 accountability measures for the 28 institutions in the Florida system. Data from each of the institutions for each of the measures for the three school years 1993-94, 1994-95, and 1995-96 was collected from this report. Information on institutional characteristics was collected from the system-level database maintained by the Florida Division of Community Colleges. These actual score measures served as dependent variables in the study together with a ratio level number representing progress toward goal. This second measure was created by dividing the score measure for each college for the three school years by the five year goal established for that measure and college.

Data to be used as independent variables in the study were collected from reports produced by the Division of Community Colleges Bureau of Research and Information Systems. Given that most of the accountability measures reflect activity that had occurred four years prior, data was collected for these years as appropriate. Institutional and program attributes were defined from available data that reflected measures of institutional size, program mix and expenditures. Those measures are detailed in Table 2.

Table 2

Measure of institutional attributes

Measures of Institutional or Program Size

- Total institutional FTE enrollment
- Total advanced and professional FTE enrollment
- Total postsecondary vocational FTE enrollment
- Total adult postsecondary vocational FTE enrollment
- Total college preparatory FTE enrollment

Measures of Program Mix

- Total advanced and professional FTE enrollment as a percent of Total FTE enrollment
- Total postsecondary vocational FTE enrollment as a percent of Total FTE enrollment
- Total adult postsecondary vocational FTE enrollment as a percent of Total FTE enrollment
- Total college preparatory FTE enrollment as a percent of Total FTE enrollment

Measures of Institutional or Program Expenditures

- Total instructional expenditures as a percent total expenditures by institution
- Total non-instructional expenditures as a percent total expenditures by institution
- Advanced and professional institutional full cost per FTE
- Postsecondary vocational institutional full cost per FTE
- Adult postsecondary vocational institutional full cost per FTE
- Total college preparatory institutional full cost per FTE
- Average salary of full time instructional personnel calculated as a 2.0 semester equivalent by institution

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5. Methodology

Given that just the initial three years of data has been reported on the accountability measures it was decided to approach this problem with descriptive statistics and analysis of variance. This seemed most appropriate and the most likely approach to yield insights necessary for developing a full research program to test the validity and reliability of the Florida Community Colleges Accountability Plan. The study was conducted in two phases.

Phase One

For each of the 17 performance indicators analysis was conducted to determine whether institutions were, in fact, indicating progress toward their state-established goals. For each measure descriptive statistics were calculated for each of the three school years 1993-94, 1994-95, and 1995-96 and charted as a box plot with median, middle 50% and upper and lower limits. A second analysis was conducted using each score measure for each college for the three school years divided by the five year goal established for that measure. For this fraction, serving as a measure of progress toward goal, descriptive statistics were calculated for each of the three school years 1993-94, 1994-95, and 1995-96 and charted as a box plot with median, middle 50% and upper and lower limits.

Phase Two

Given the wide dispersion seen on the 17 score measures in phase one it was decided to explore the relationship between each of the measures and institutional characteristics such as institutional and program size, programmatic mix, institutional and program expenditures. Each of the 17 score measures was averaged across all three years by institution and the institutions ranked in ascending order. For each measure the institutions were then placed into one of three groups: a low group on a measure, containing 9 institutions; an average group on a measure, containing 10 institutions; and a high group on a measure, containing 9 institutions. A mean was then calculated for each group. Correlation coefficients were calculated for all the measures found in tables 1 and 2. Given these results select accountability measures were chosen for further examination within the context of select institutional characteristics. Using each selected institutional characteristic as a dependent variable, a repeated measures ANOVA was calculated with the selected accountability measures serving as the independent variables across the low, average and high groupings over a six year period.

6. Results or Conclusions

The most notable result in phase one was the fairly wide dispersion between the institutions on the actual accountability measures and on progress toward goal. As can be seen in figures 1 through 17, eight of the accountability measures exhibited some progress toward goal, in the terms of system-wide mean and a decreasing dispersion, while nine did not. The measures showing some progress included the: associate in arts retention measure (Figure 1) ; associate in arts success measure (Figure 2); associate in science success measure (Figure 4); postsecondary vocational certificate retention measure (Figure 5); postsecondary vocational certificate success measure (Figure 6); associate in arts transfer student performance measure (Figure 7); college preparatory reading performance measure (Figure 10); and the college preparatory retention measure (Figure 13). Interestingly six of these are related to retention and success and the remaining two to academic performance.

Phase two produced a number of interesting interactions that warrant further study in the future when more data is available. Examining measures related to the associate in arts programs higher faculty salaries, a higher percent of total expenditures spent on instruction, and a higher overall FTE count seemed to be related to higher retention and success. Interestingly, cost per FTE for the A&P program showed little differentiated effect. What was not readily explained was that institutions with a lower percentage of students in A &P programs had a lower retention rate and institutions with a higher percentage of students in A & P programs had lower success rate.

Examining measures related to the associate in science programs, a higher overall FTE count and a higher percent of postsecondary vocational FTE students seemed to be related to higher retention and success. Interestingly, there were no other institutional characteristics that were visibly related to the accountability measures for the associate in science programs.

Examining several academic performance accountability measures indicated that students from institutions with smaller student populations were more successful in the classroom at senior institutions than students from larger institutions. Institutions with a higher percentage of students in A & P programs and institutions with a higher percent of total expenditures spent on instruction evidenced higher total performance on the CLAST measure.

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Overall, some of the effects seen in the analyses conducted for phase two make intuitive sense while others do not. What is clear is that the constructs defined in this state's accountability program for community colleges contain a rich potential mix of effects and interaction effects. Establishing construct validity for these potential instruments of public higher education policy will require the following: a sophisticated and appropriate research design; more discrete data on individal academic programs at the institution level; more discrete data on students in individual programs at the instituion level; and an appropriate historical framework for the data.

7. Implications for Institutional Researchers

The first implication for institutional researchers is that state-established accountability measures and performance indicators should undergo rigorous analysis in terms of their validity and reliability related to the constructs that they are purported to measure. The results of this preliminary study indicate that the institutional research community must take an active role in the study of measures defined as instruments of public higher education policy.

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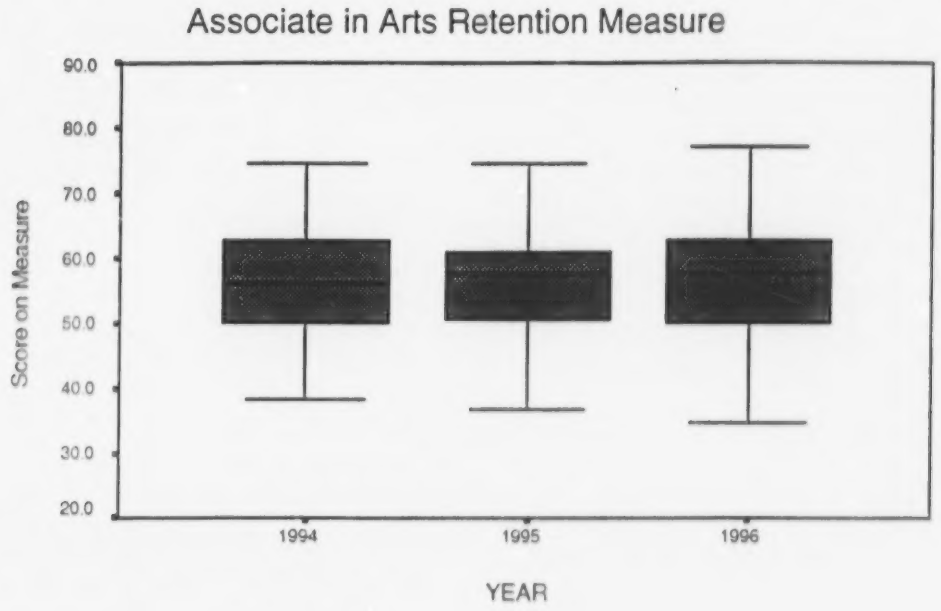
Figure 1

Associate in Arts Retention Measure: Score Measure



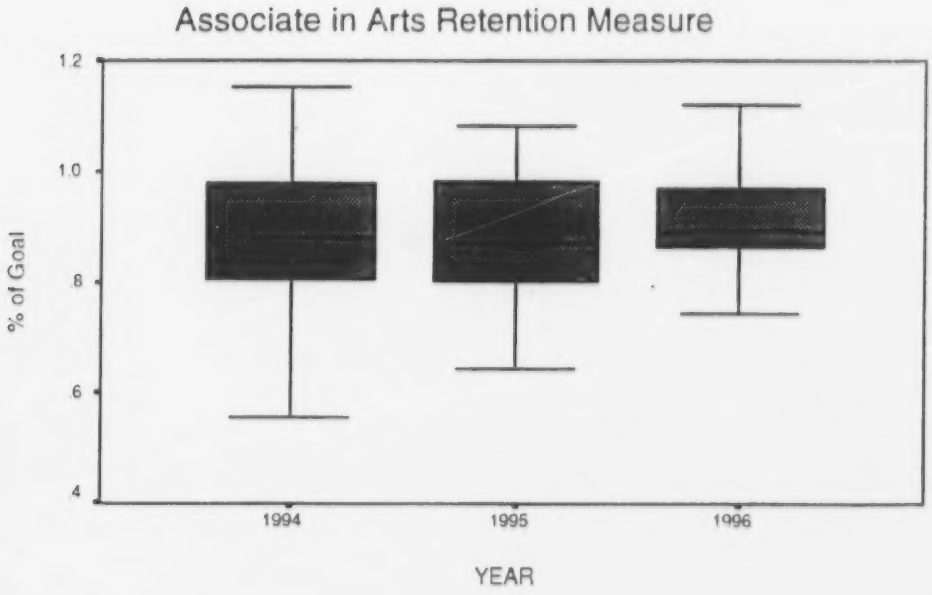
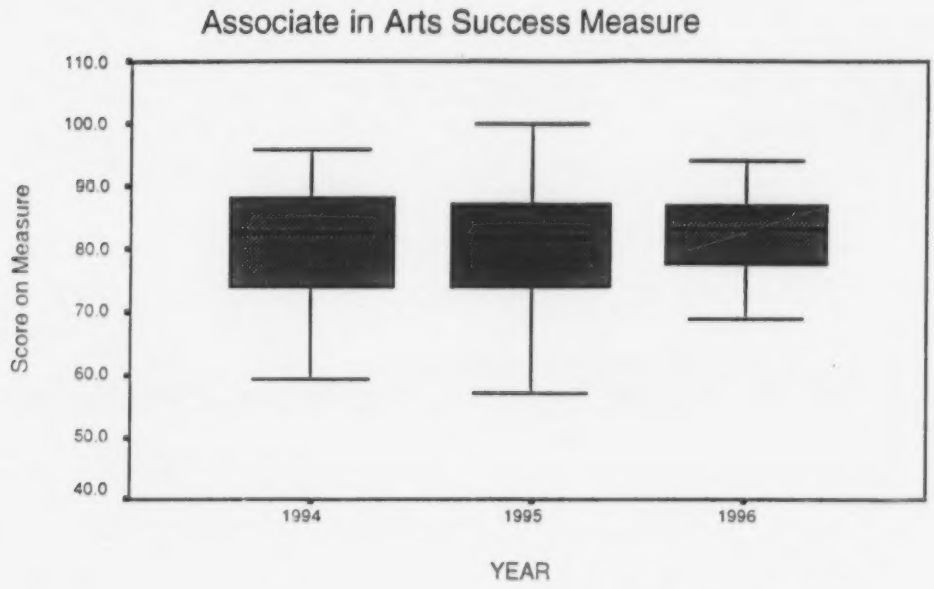


Figure 2

Associate in Arts Success Measure: Score Measure and as a Percent of Goal



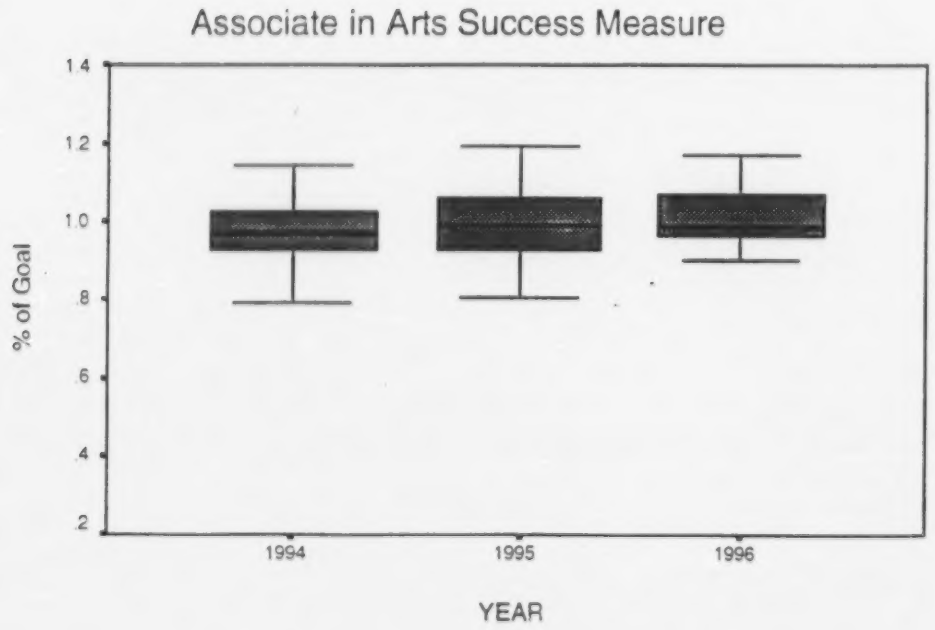
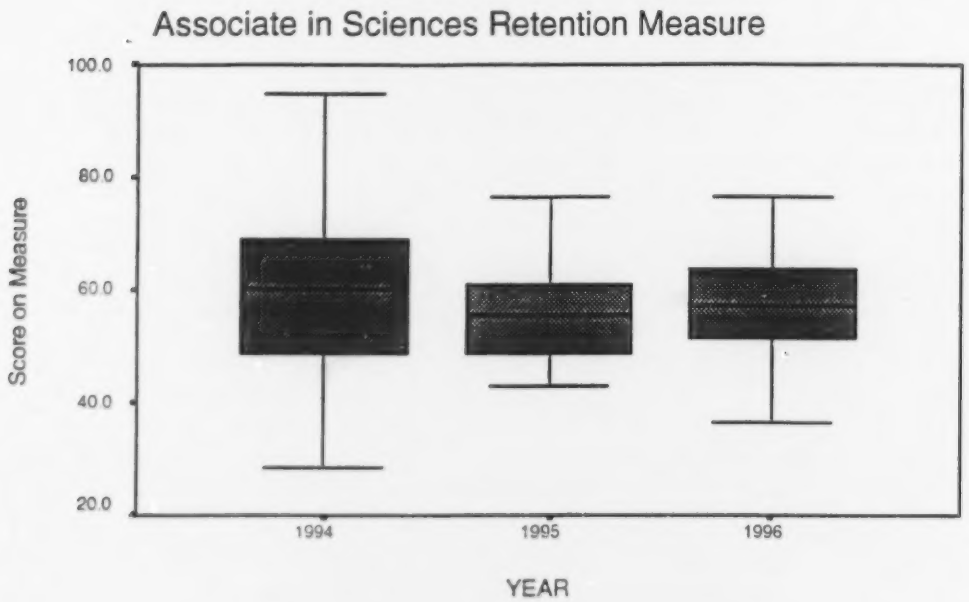


Figure 3

Associate in Science Retention Measure: Score Measure and as a Percent of Goal



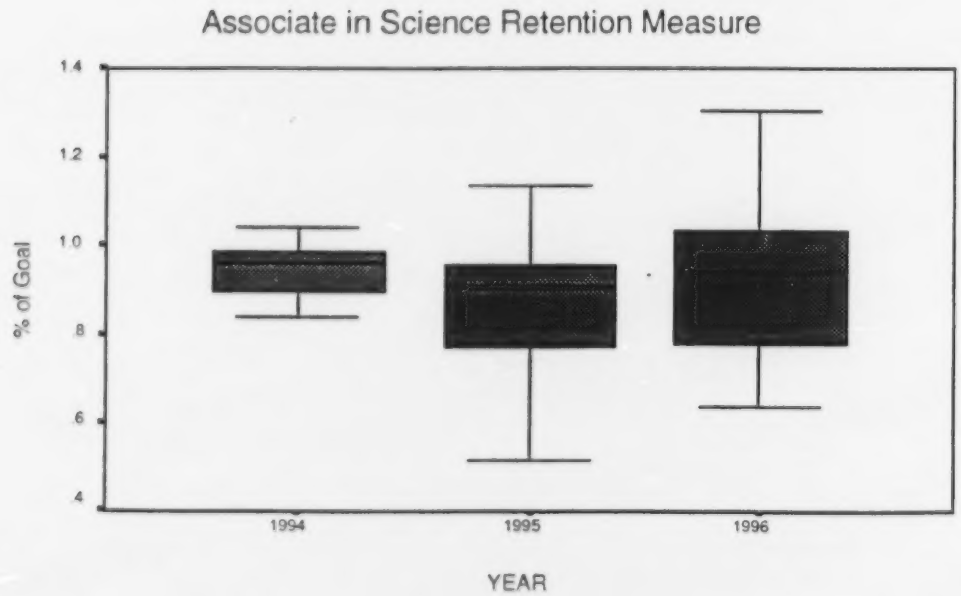
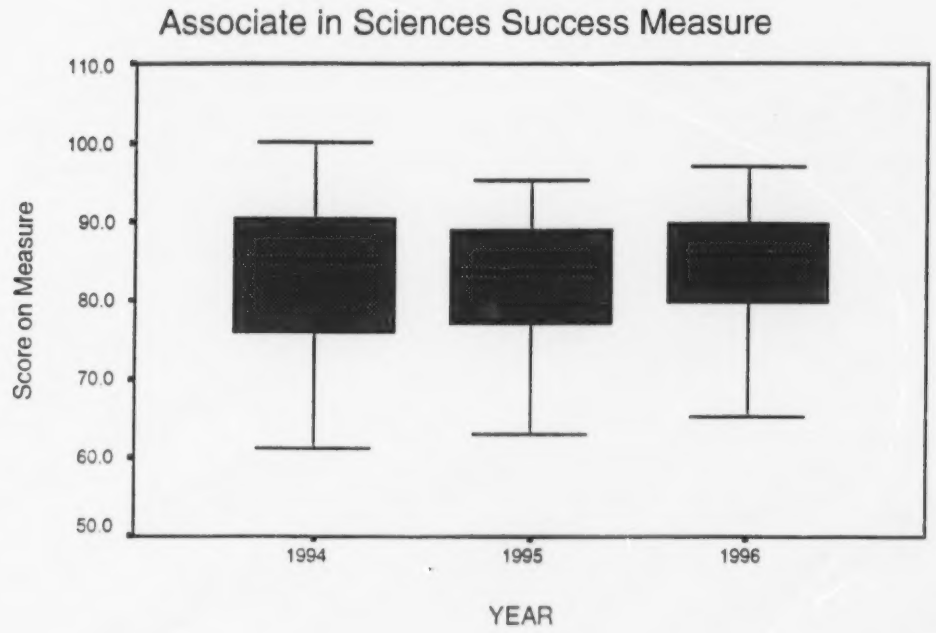


Figure 4

Associate in Science Success Measure: Score Measure and as a Percent of Goal



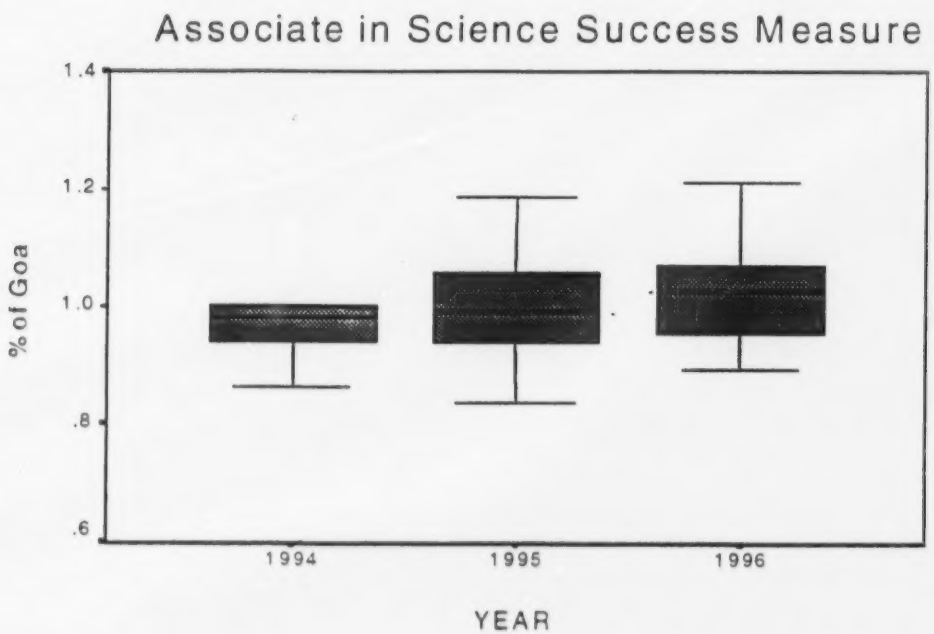
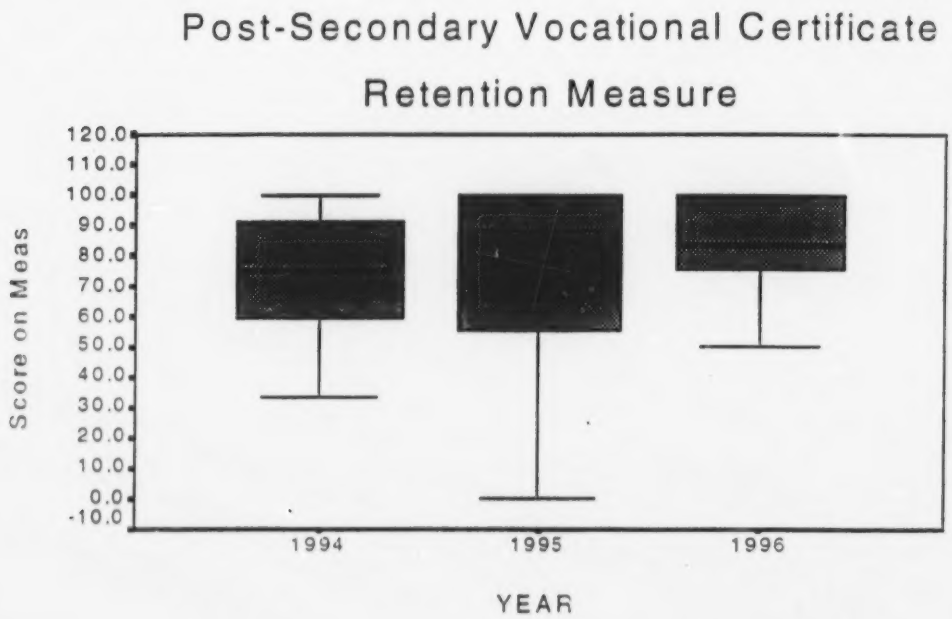


Figure 5

Post-Secondary Vocational Certificate Retention Measure: Score Measure and as a Percent of Goal



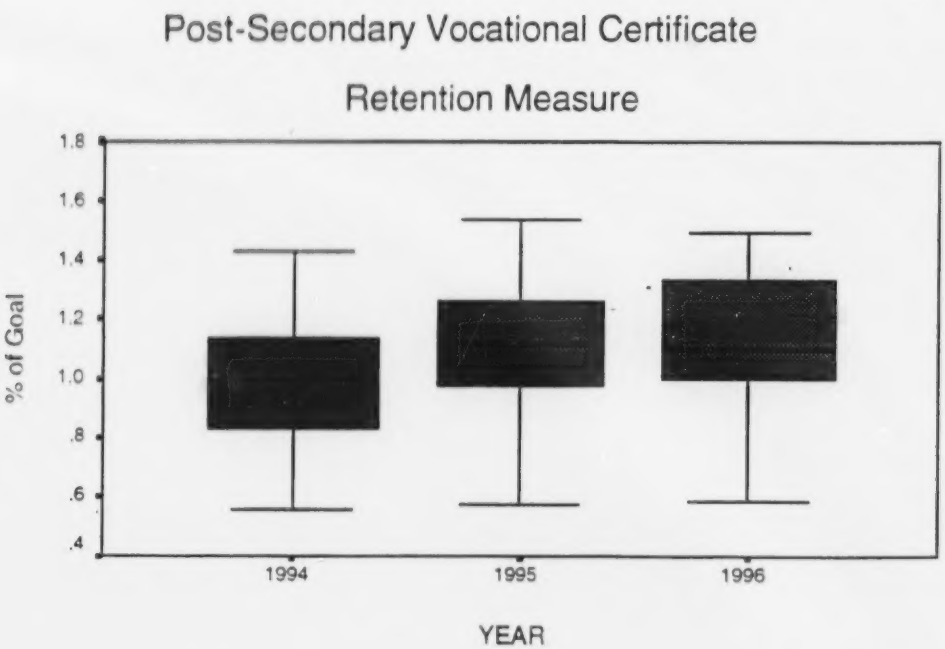
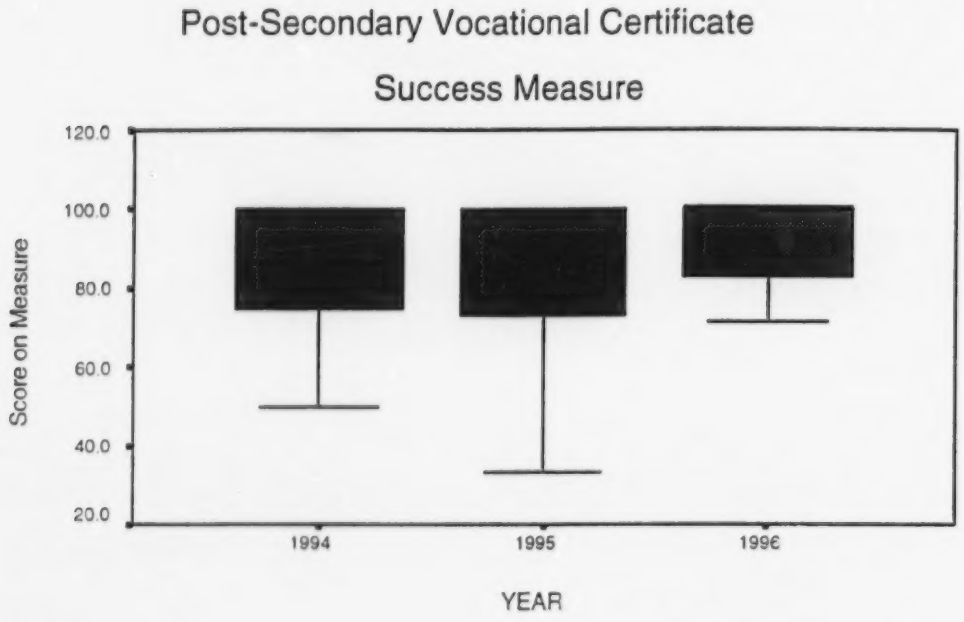


Figure 6

Post-Secondary Vocational Certification Success Measure: Score Measure and as a Percent of Goal



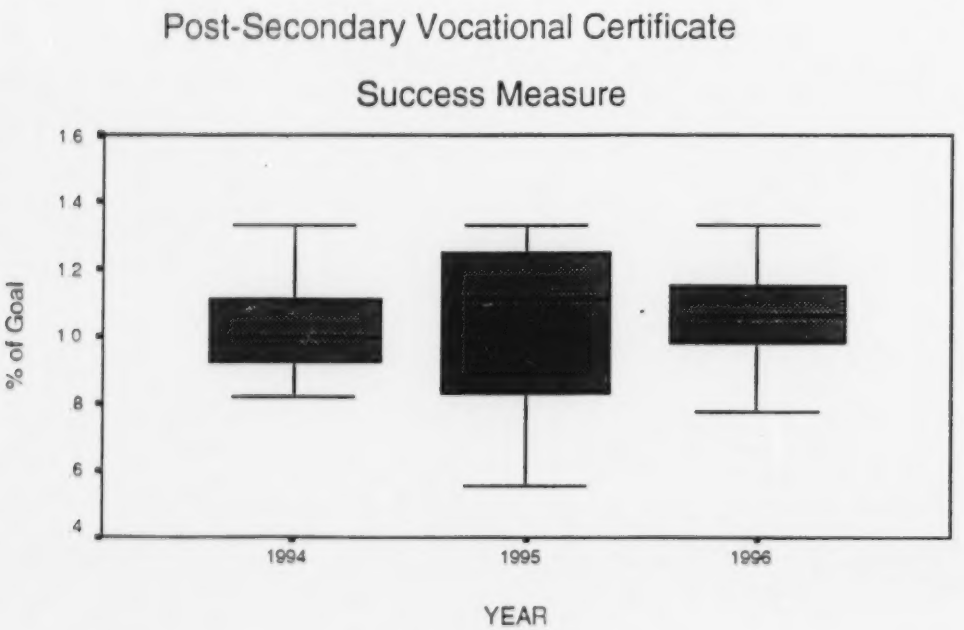
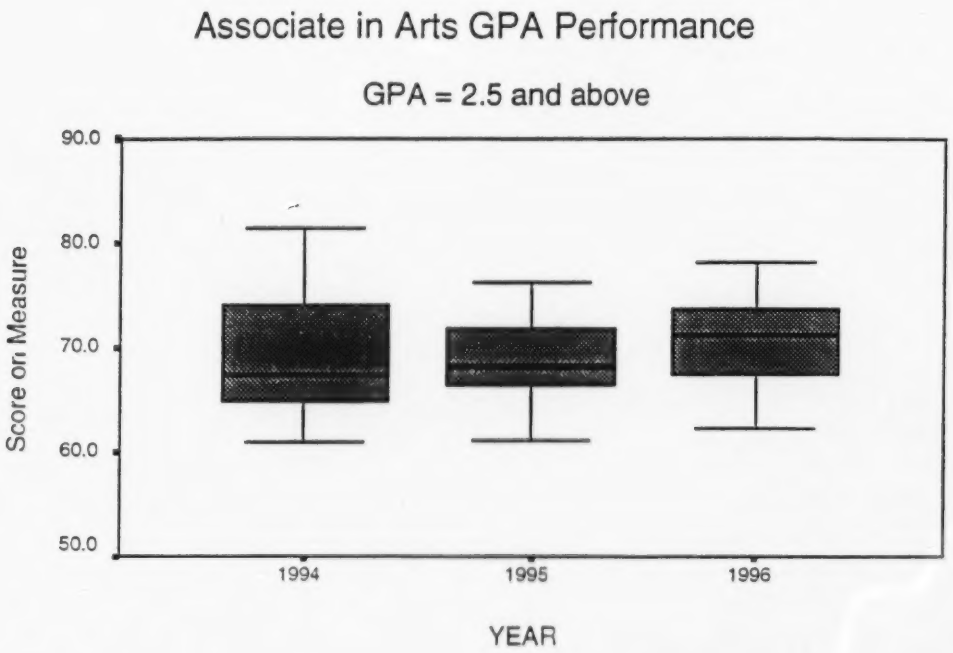


Figure 7

Associate in Arts GPA Performance Measure: Score Measure and as a Percent of Goal



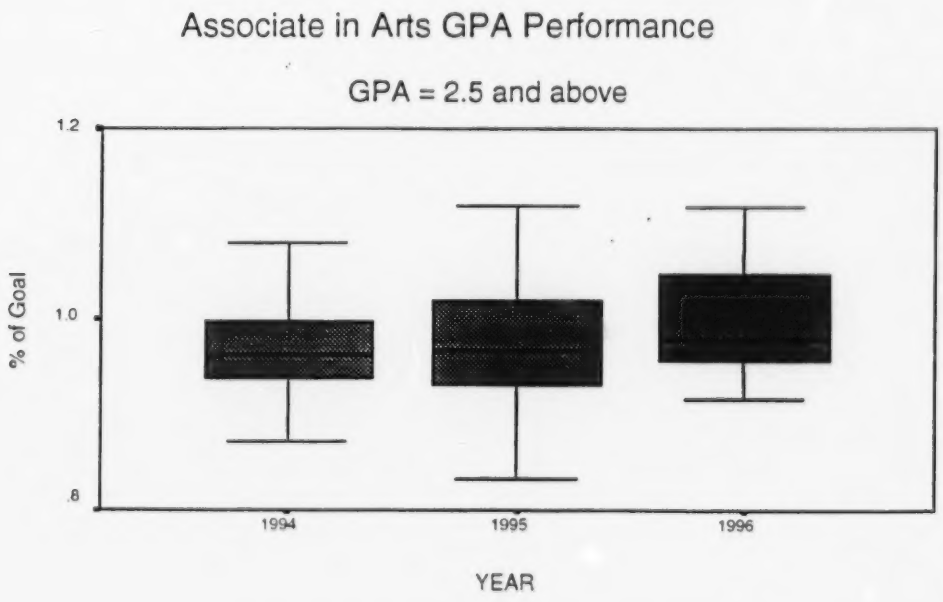
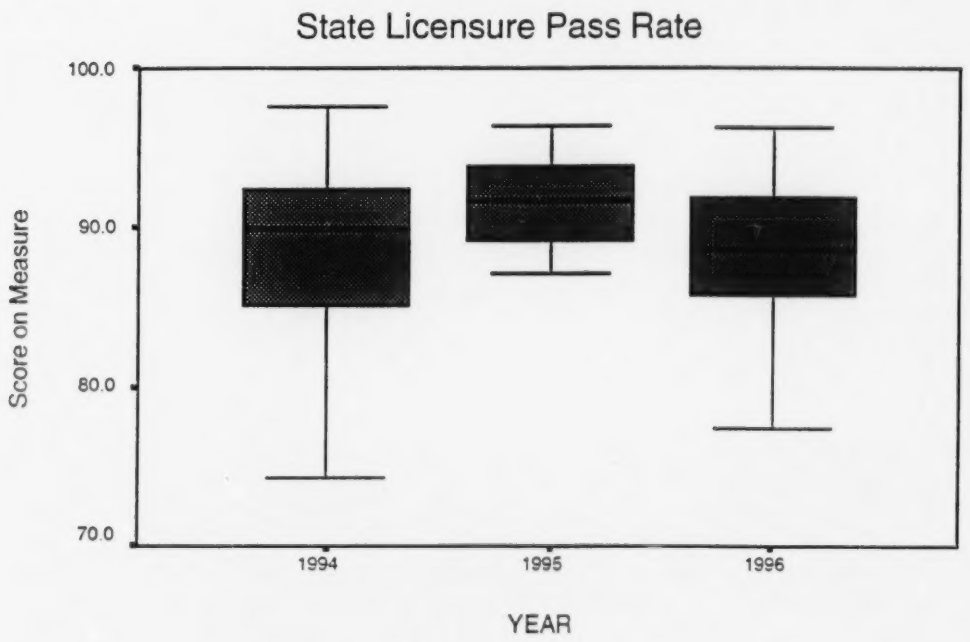


Figure 8

Licensure Pass Rate Measure: Score Measure and as a Percent of Goal



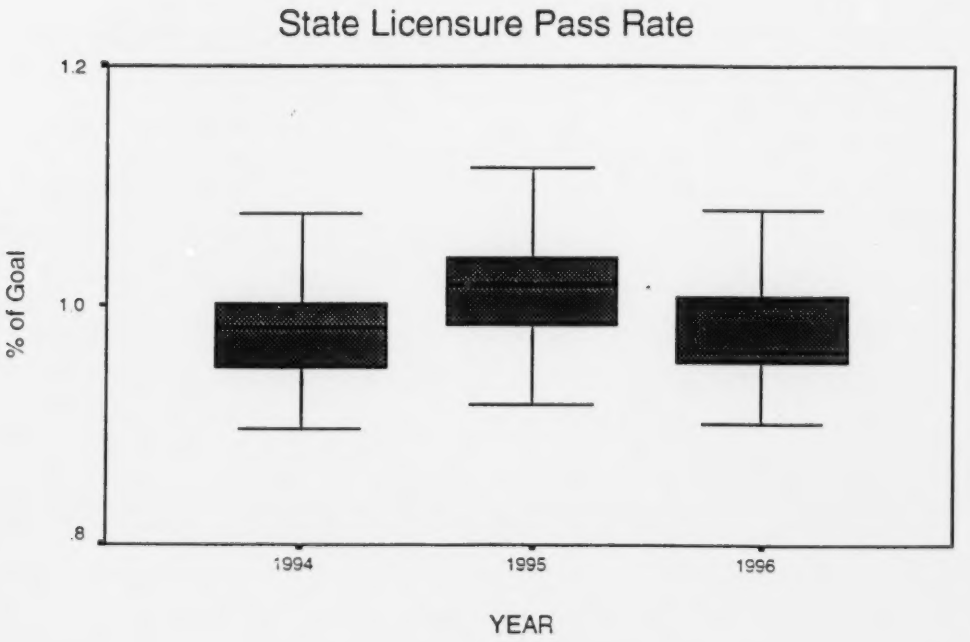
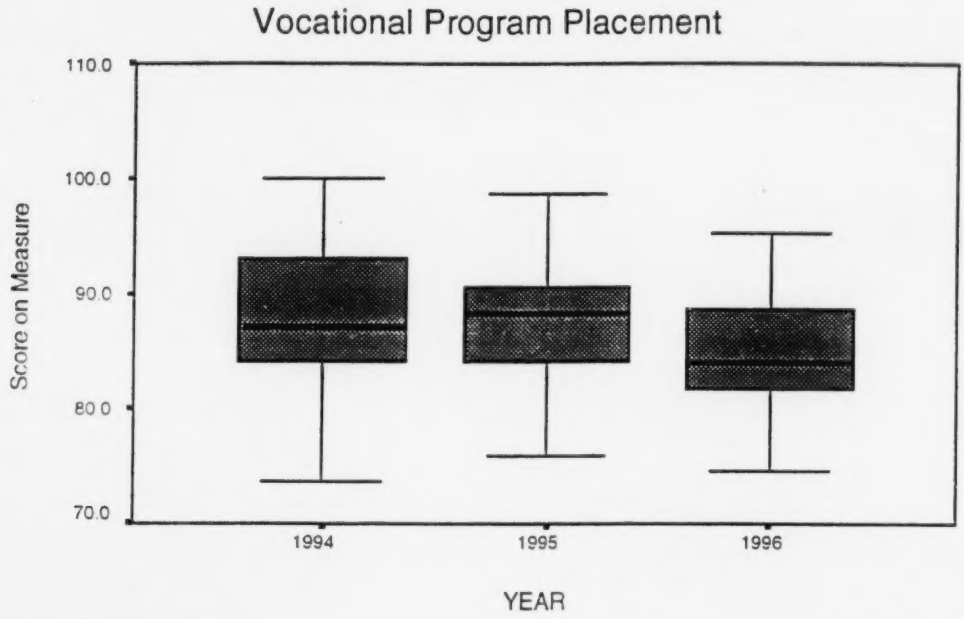


Figure 9

Vocational Program Placement Rate Measure: Score Measure and as a Percent of Goal



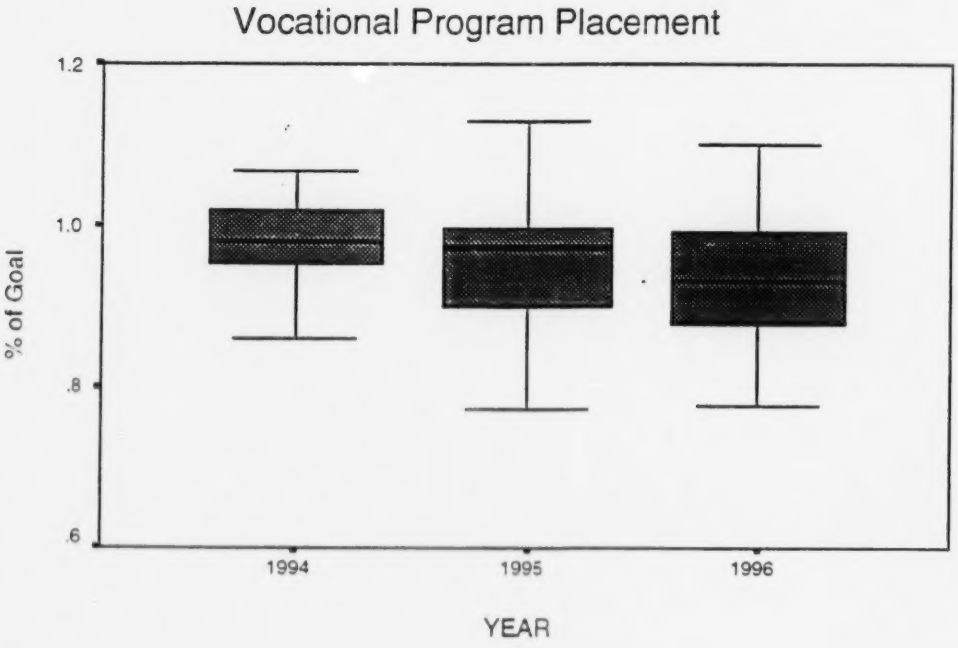
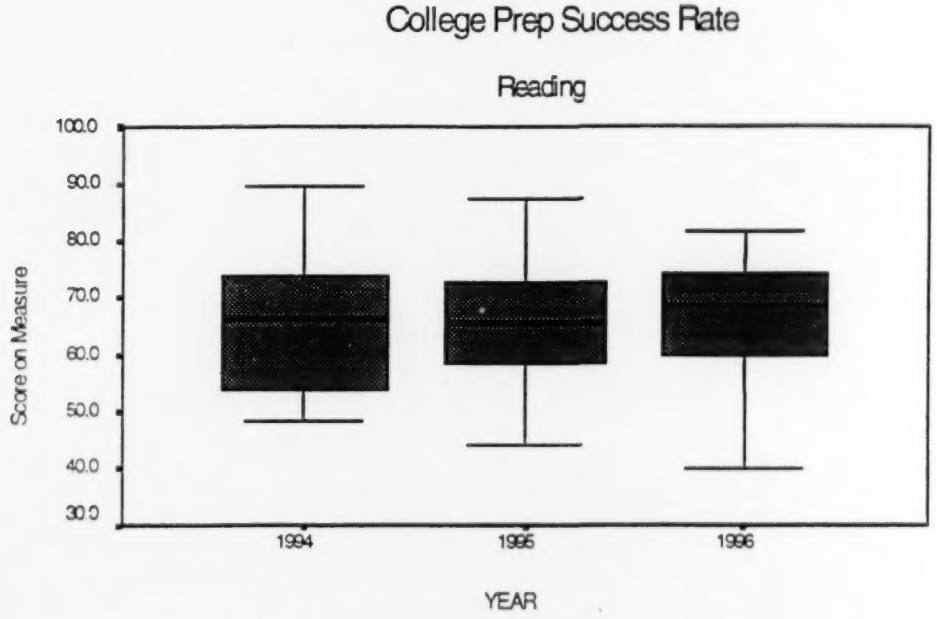


Figure 10

College Preparatory Reading Performance Measure: Score Measure and as a Percent of Goal



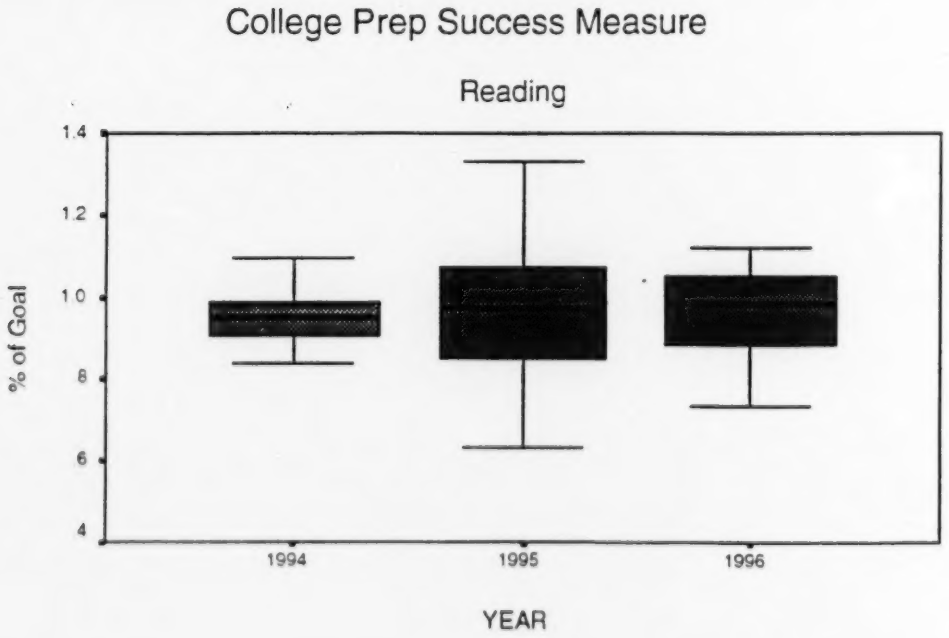
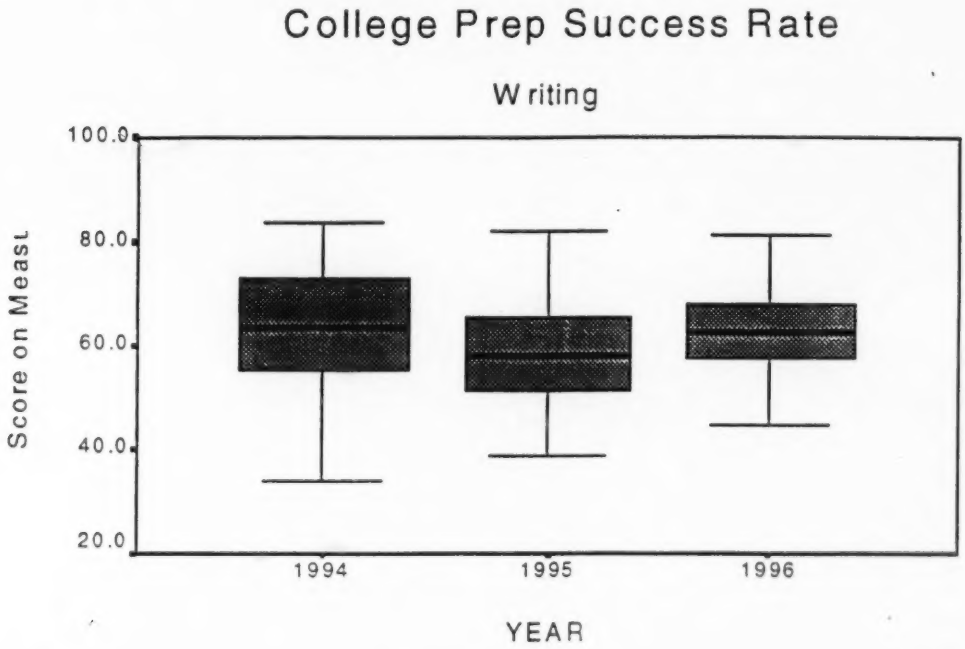


Figure 11

College Preparatory Writing Performance Measure: Score Measure and as a Percent of Goal



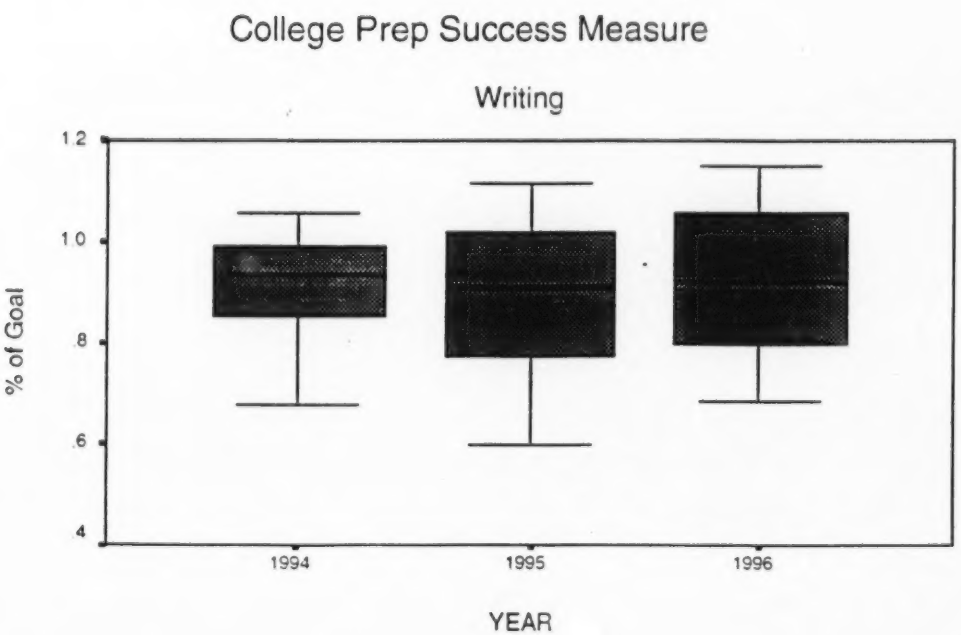
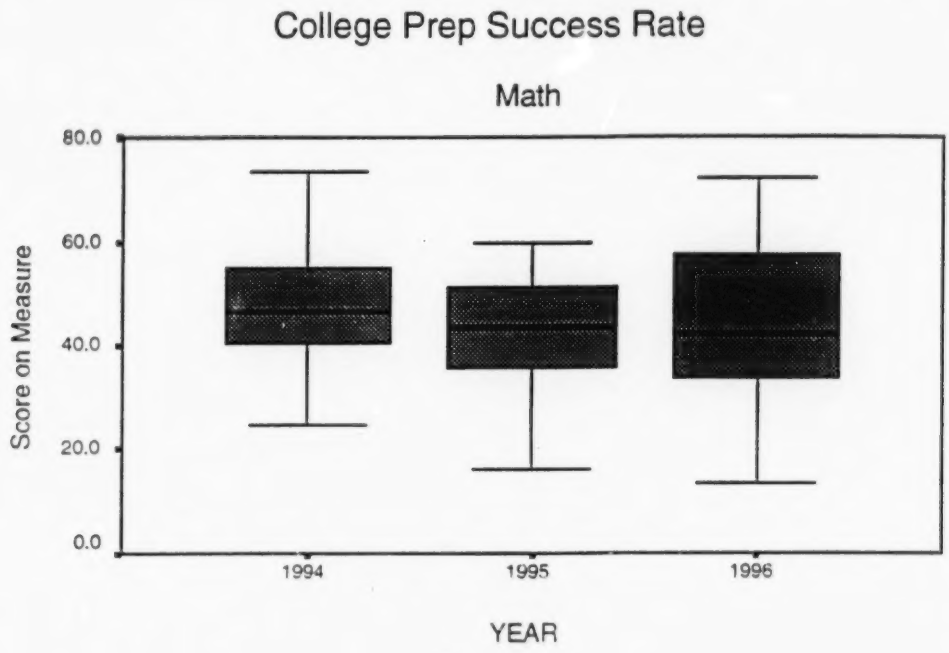


Figure 12

College Preparatory Math Performance Measure: Score Measure and as a Percent of Goal



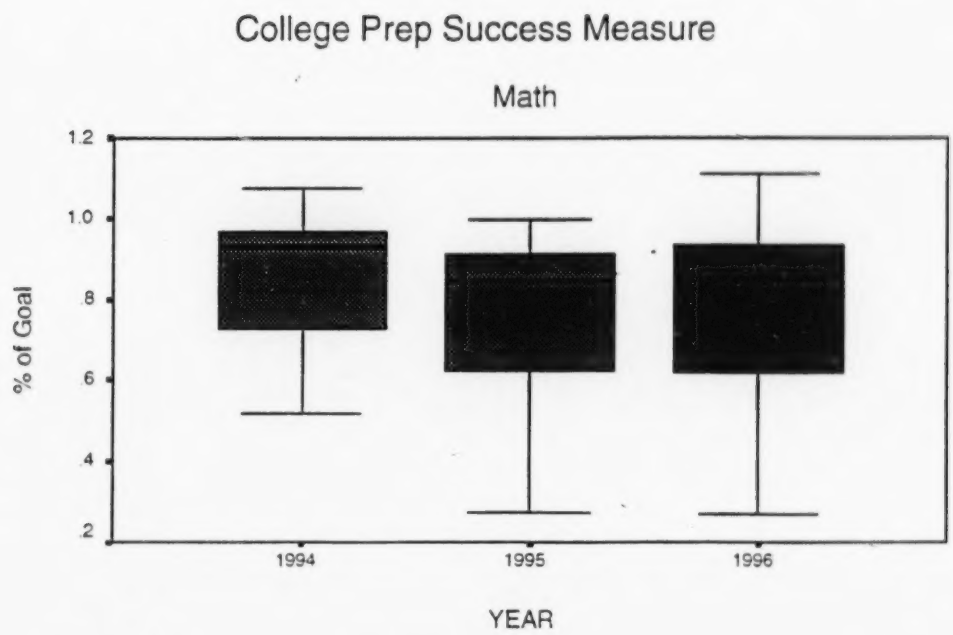
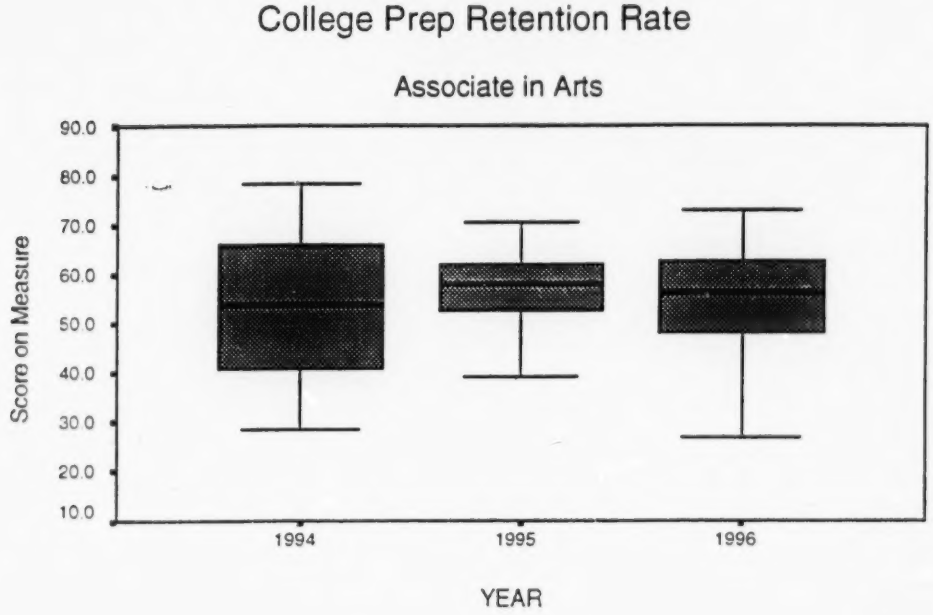


Figure 13

College Preparatory Retention Measure: Score Measure and as a Percent of Goal



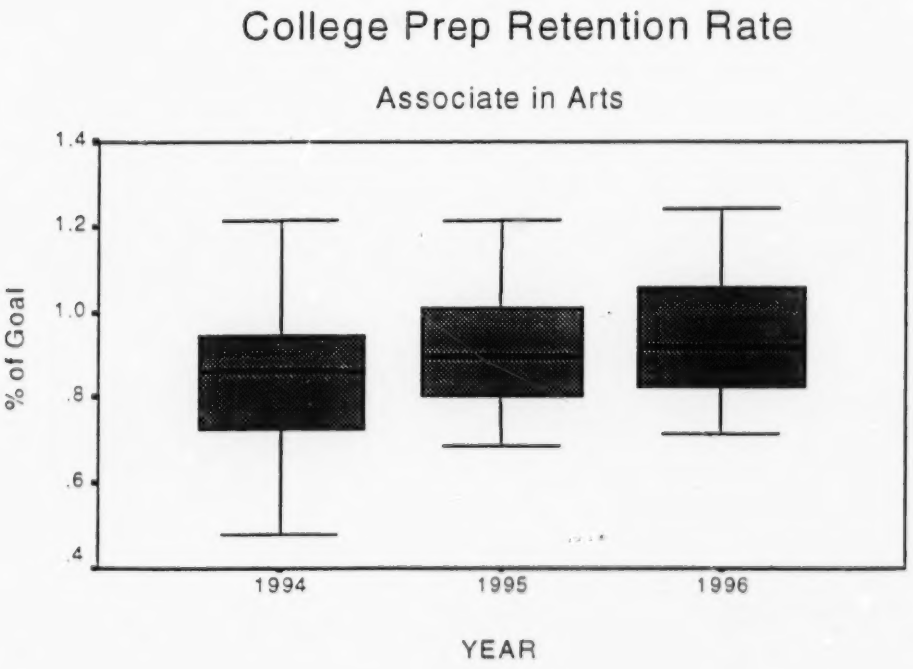
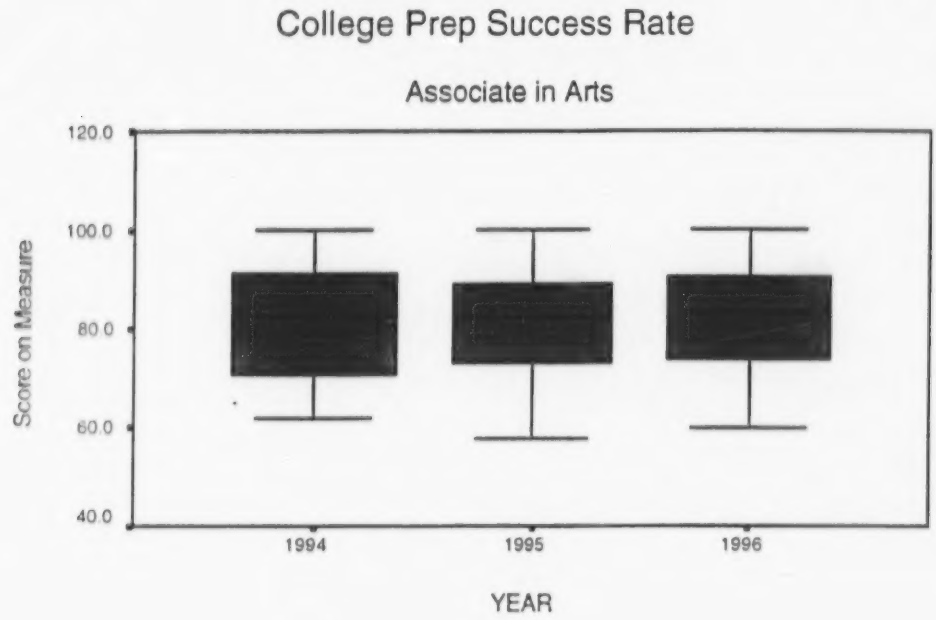


Figure 14

College Preparatory Success Measure: Score Measure and as a Percent of Goal



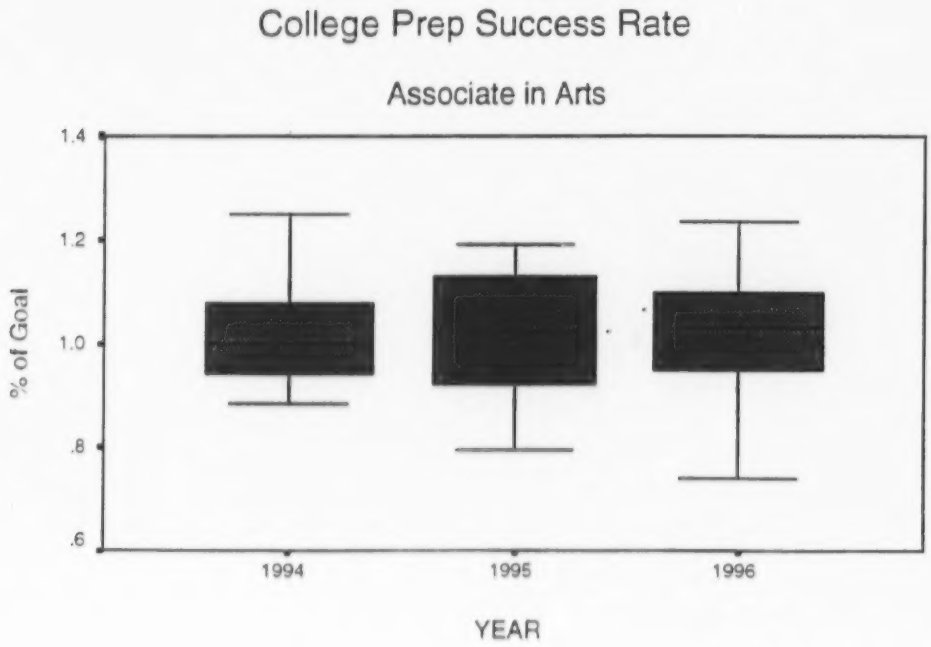
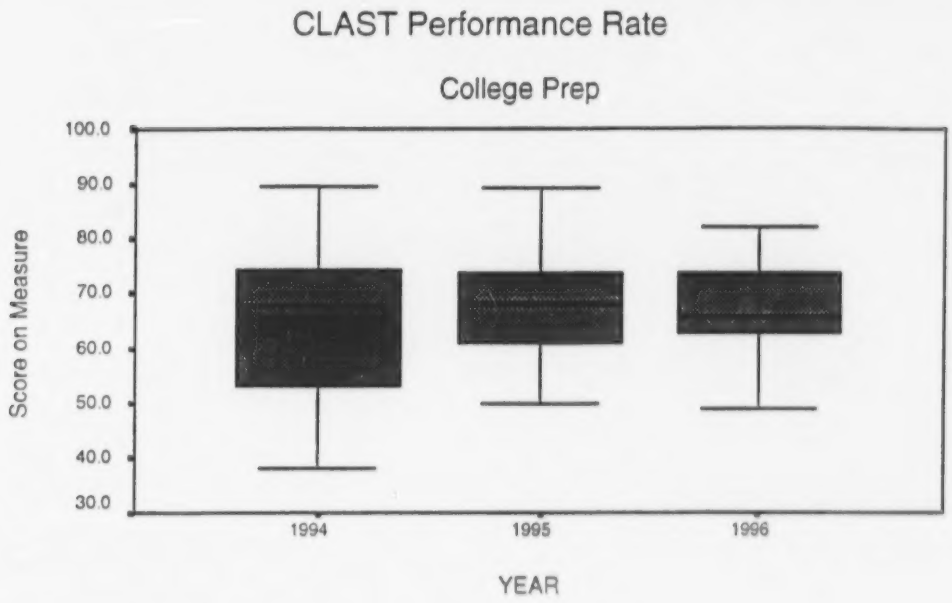


Figure 15

Associate in Arts CLAST Measure – College Preparatory Students: Score Measure and as a Percent of Goal



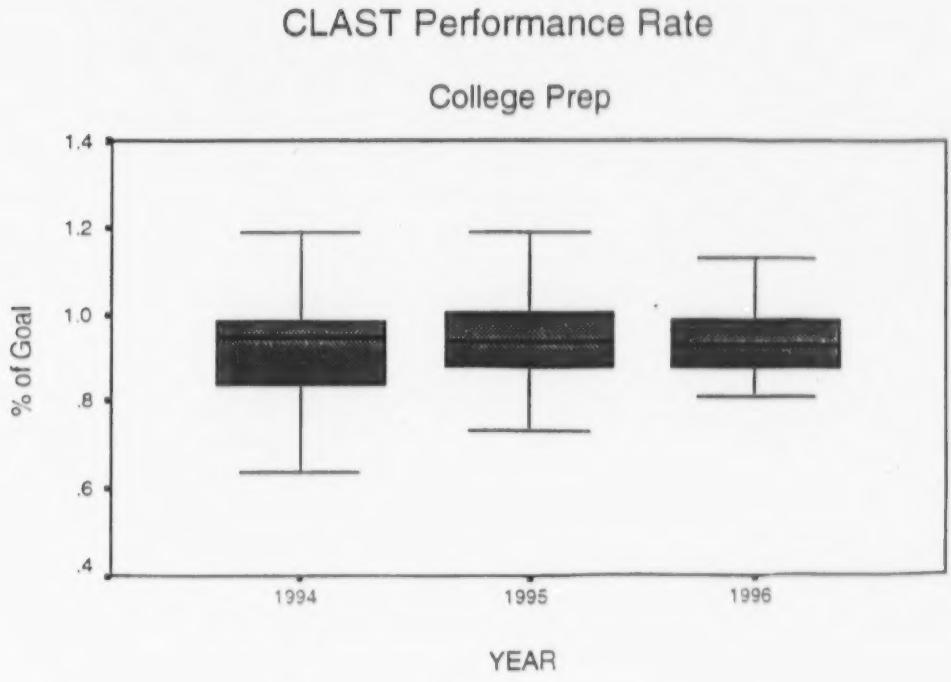
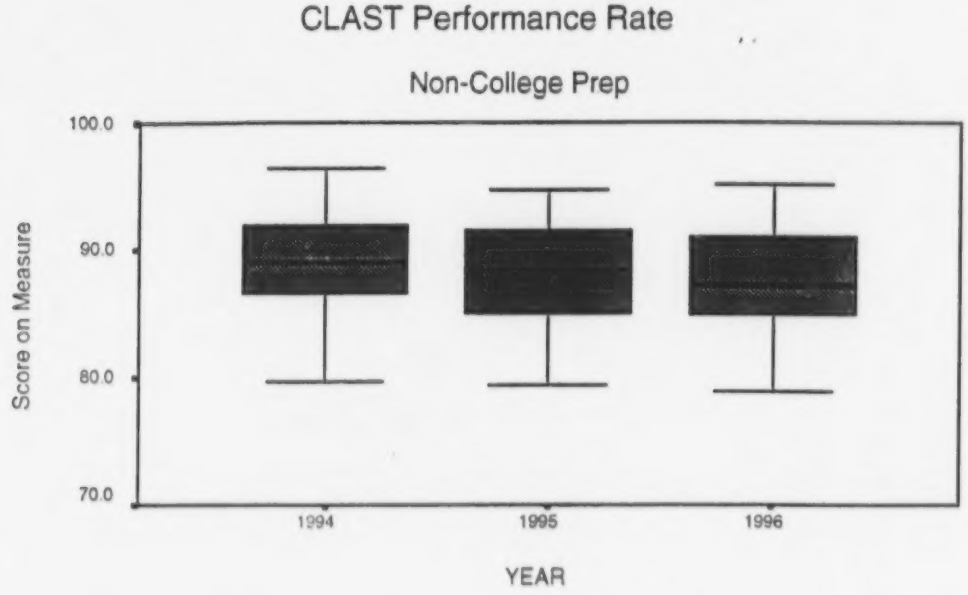


Figure 16

Associate in Arts CLAST Measure – Non-College Preparatory Students: Score Measure and as a Percent of Goal



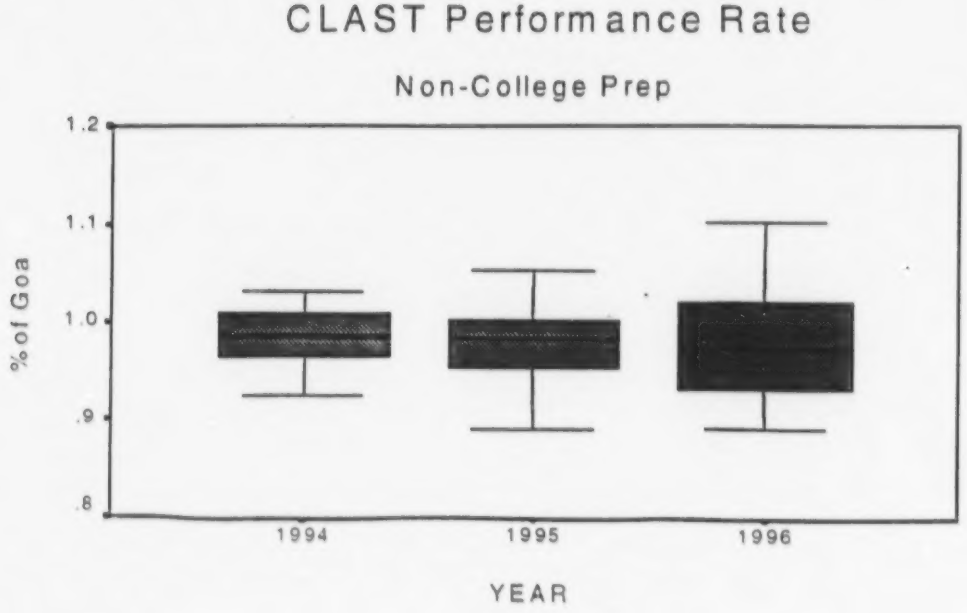
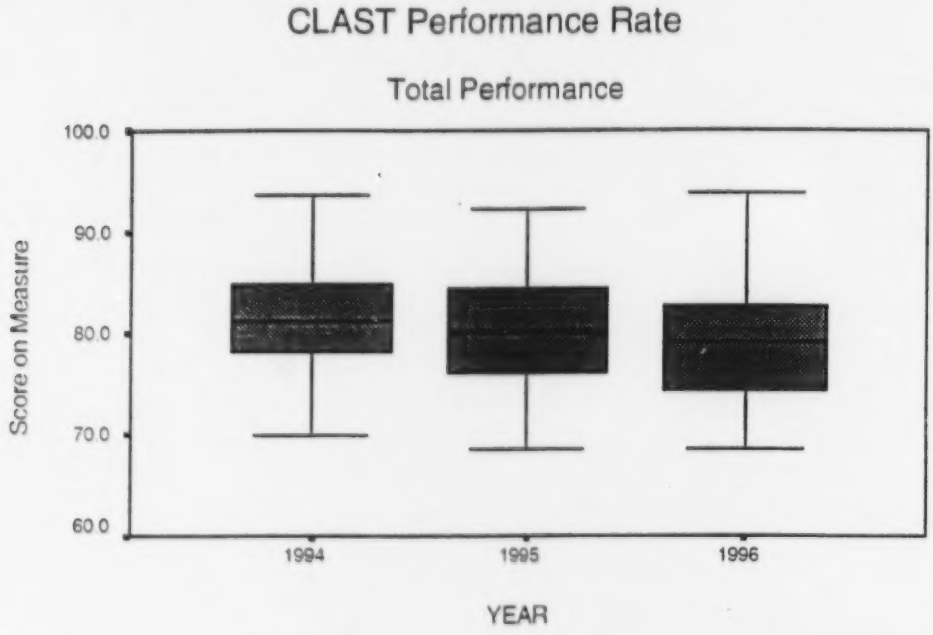


Figure 17

Associate in Arts CLAST Measure – All Students: Score Measure and as a Percent of Goal



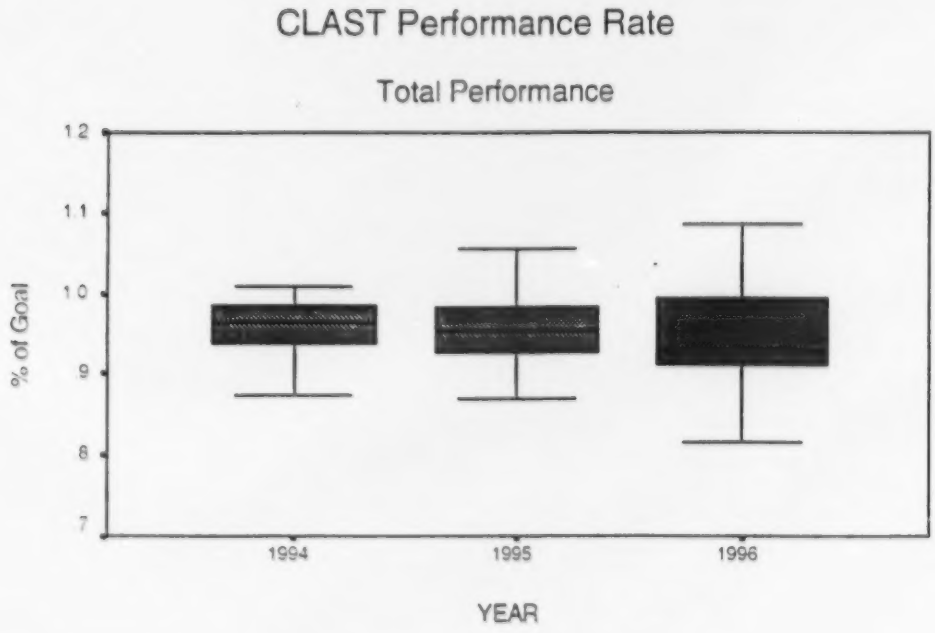
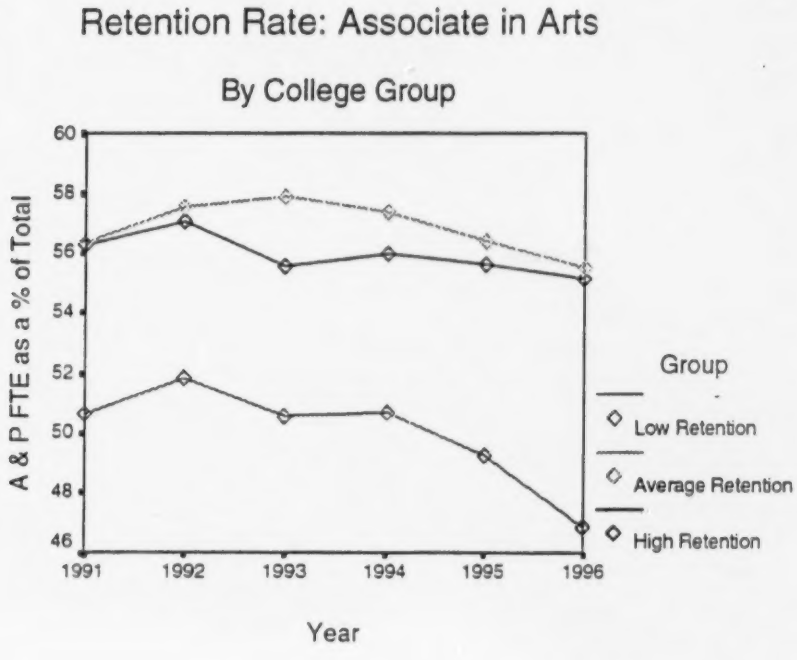


Figure 18

Retention and Success Rate: Associate in Arts By A & P FTE as a % of Total By Group



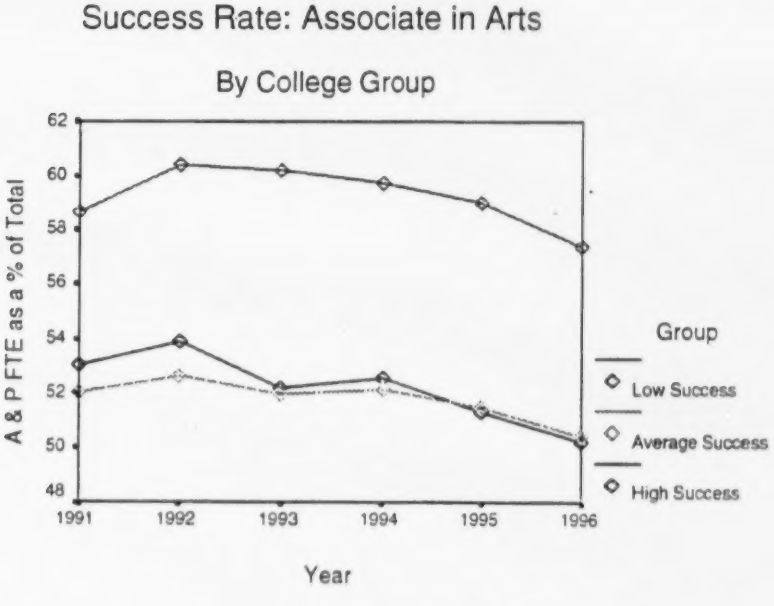
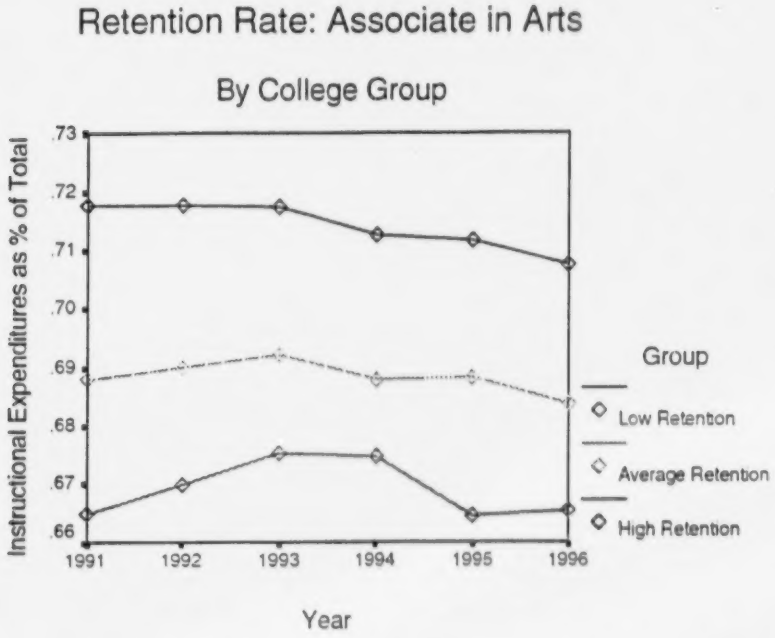


Figure 19

Retention and Success Rate: Associate in Arts By Instructional Expenditures as % of Total By Group



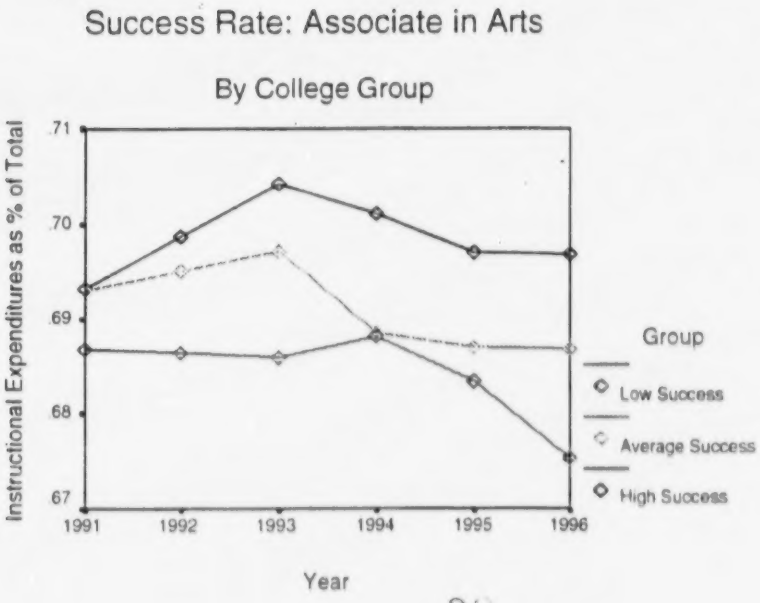


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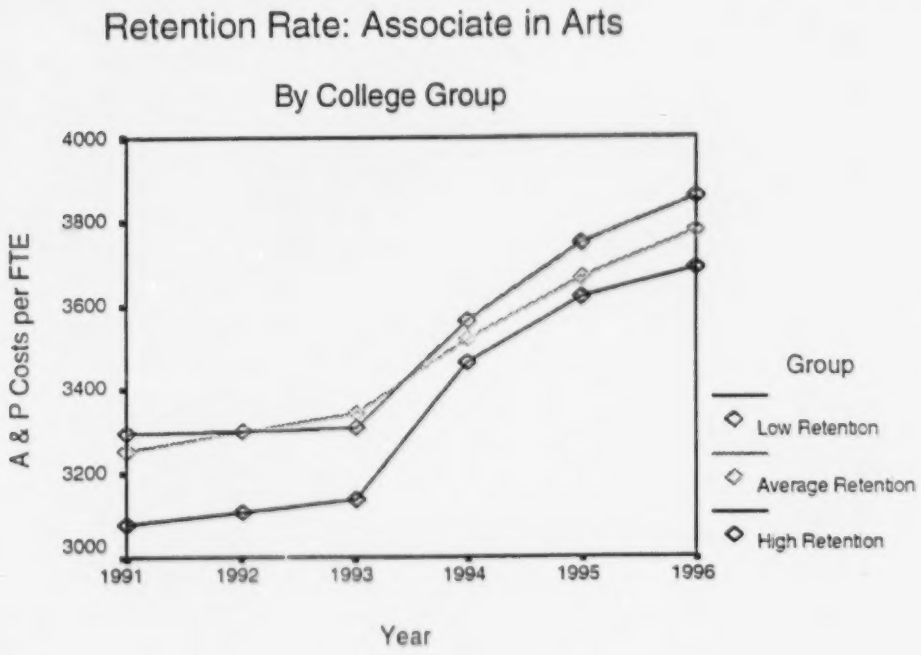
Figure 20

Retention and Success Rate: Associate in Arts By A & P Costs Per FTE By Group



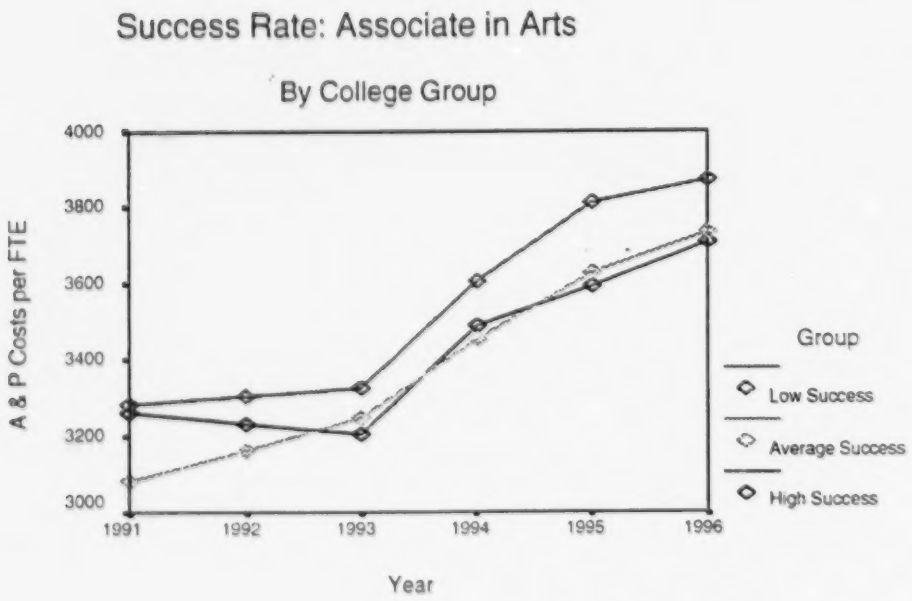
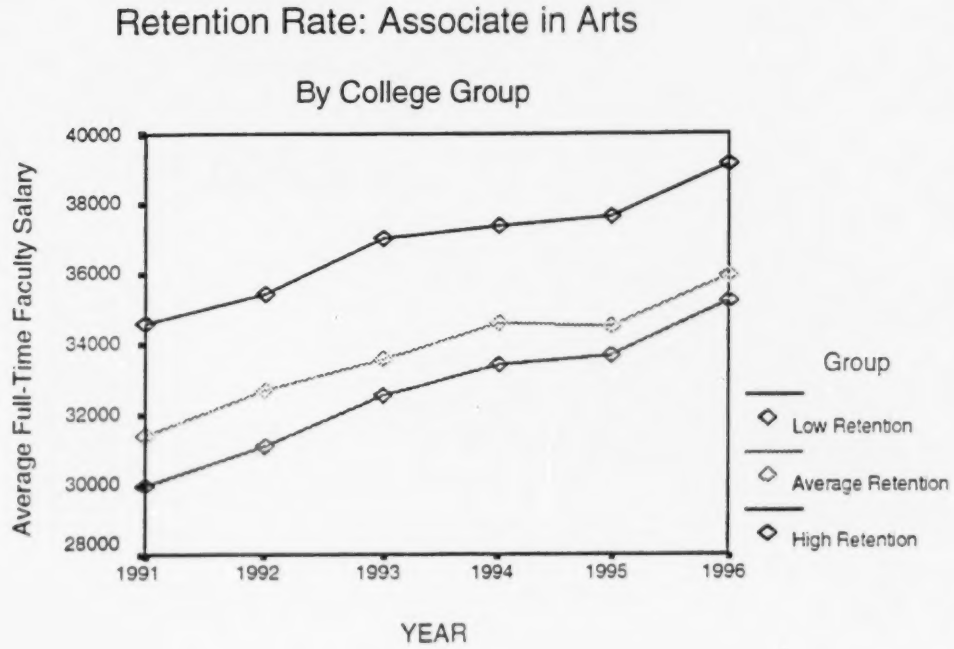


Figure 21

Retention and Success Rate: Associate in Arts By Average Full Time Faculty Salary by Group



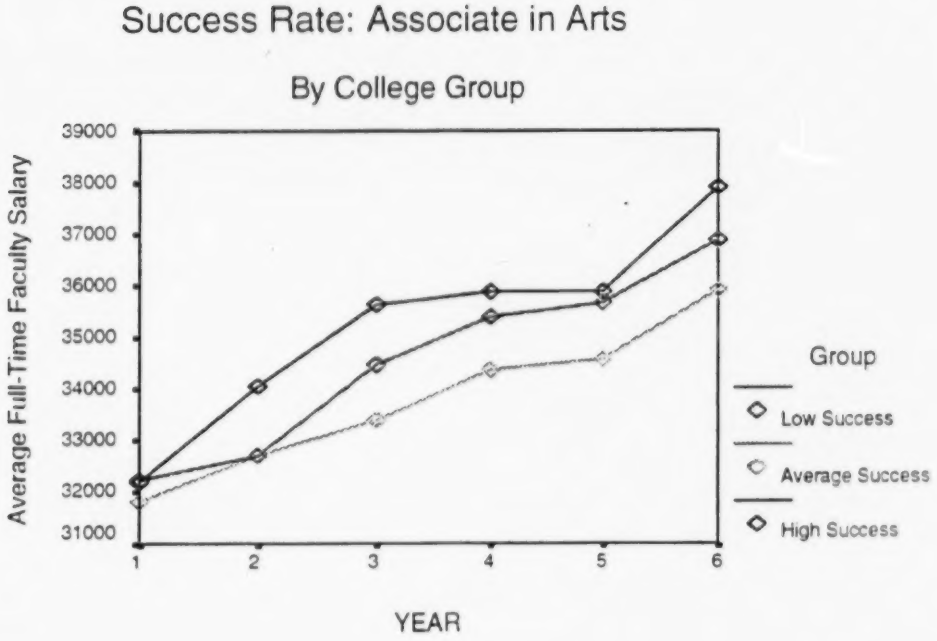
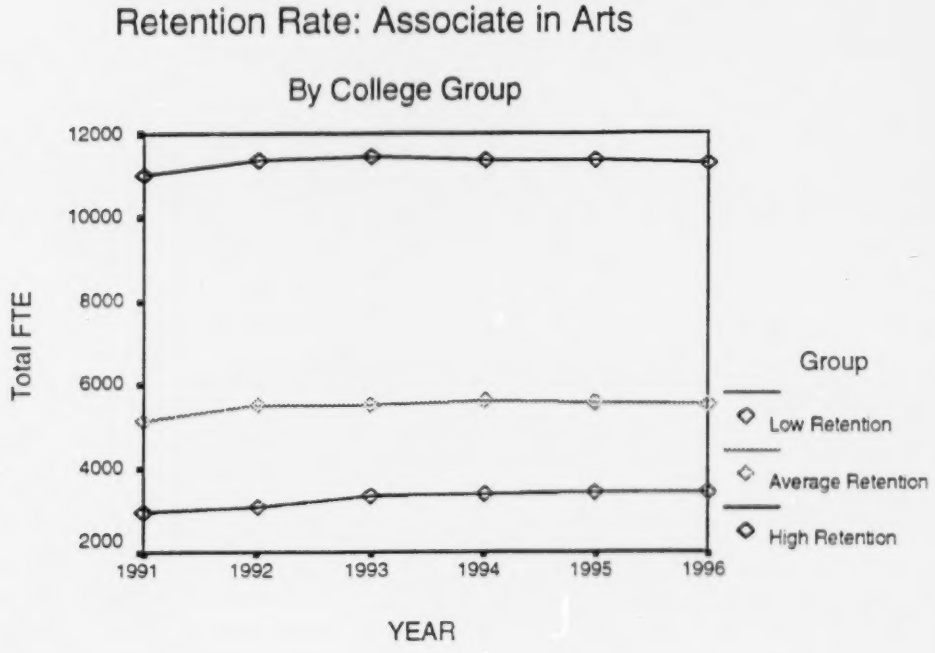


Figure 22

Retention and Success Rate: Associate in Science By Total FTE by Group



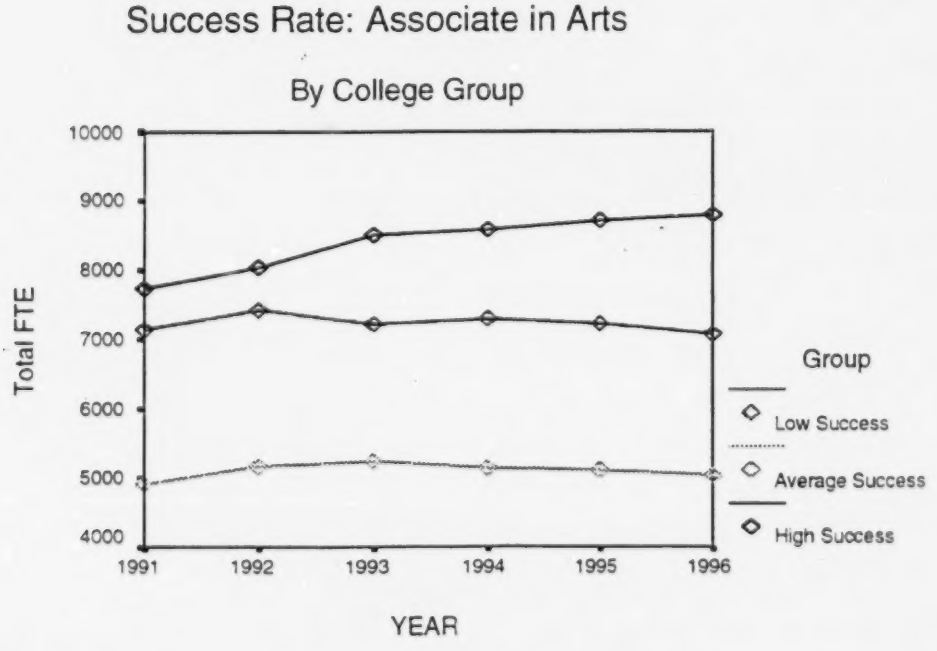
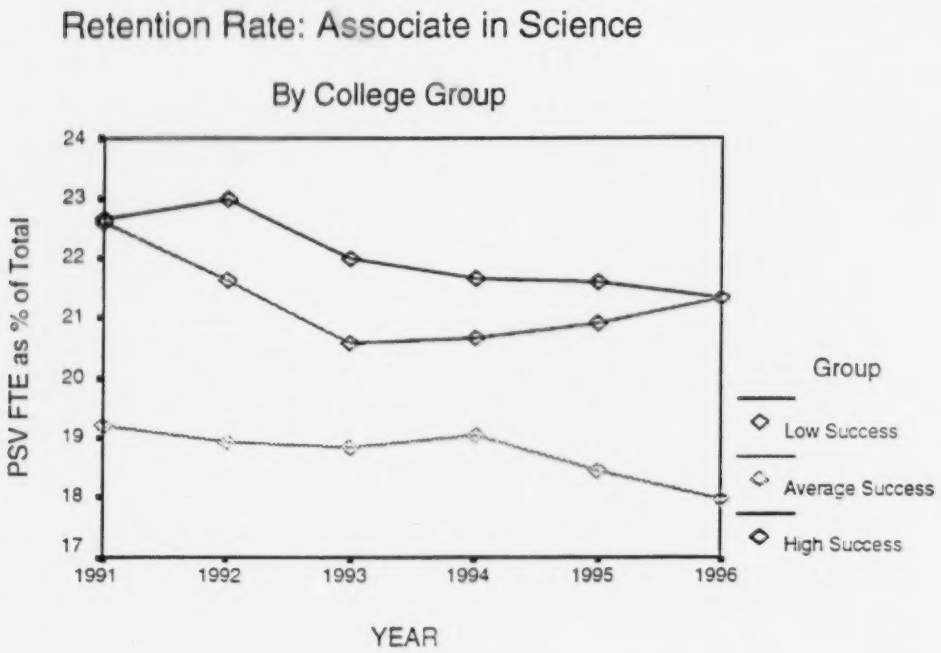


Figure 23

Retention and Success Rate: Associate in Science By PSV FTE as % of Total By Group



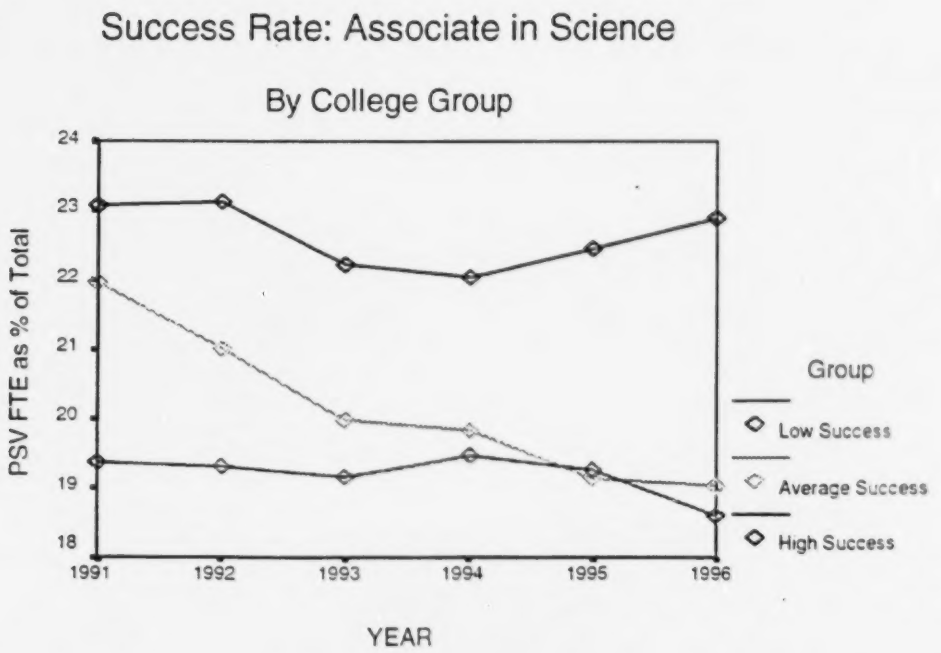
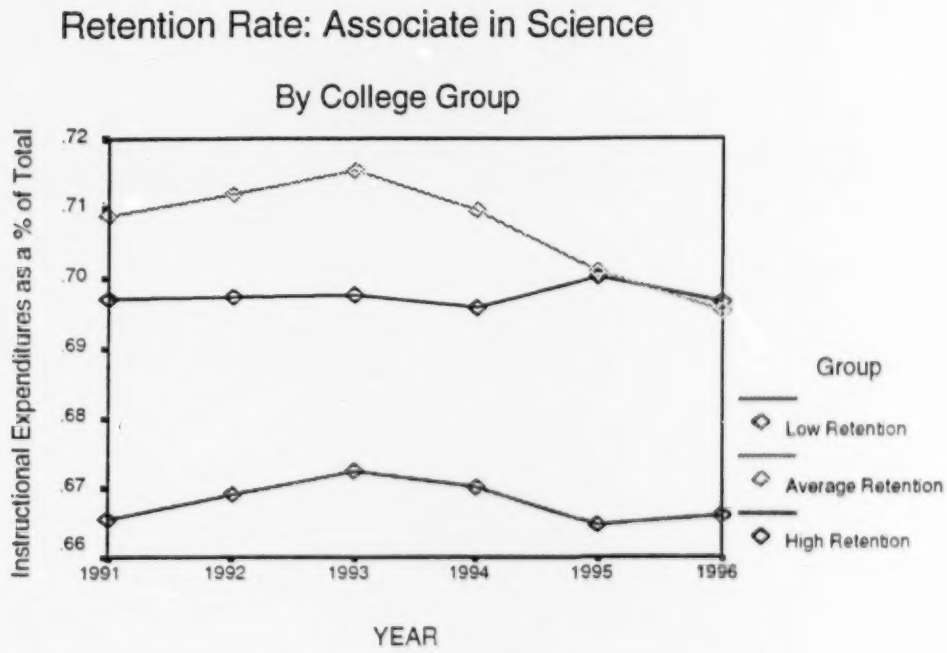


Figure 24

Retention and Success Rate: Associate in Science By Instructional Expenditures as % of Total By Group



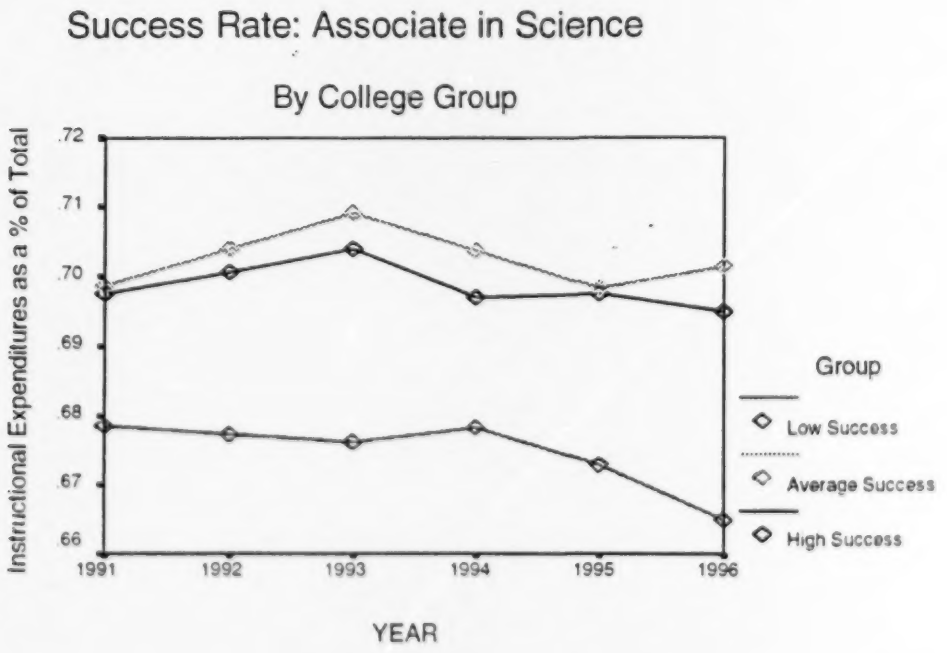


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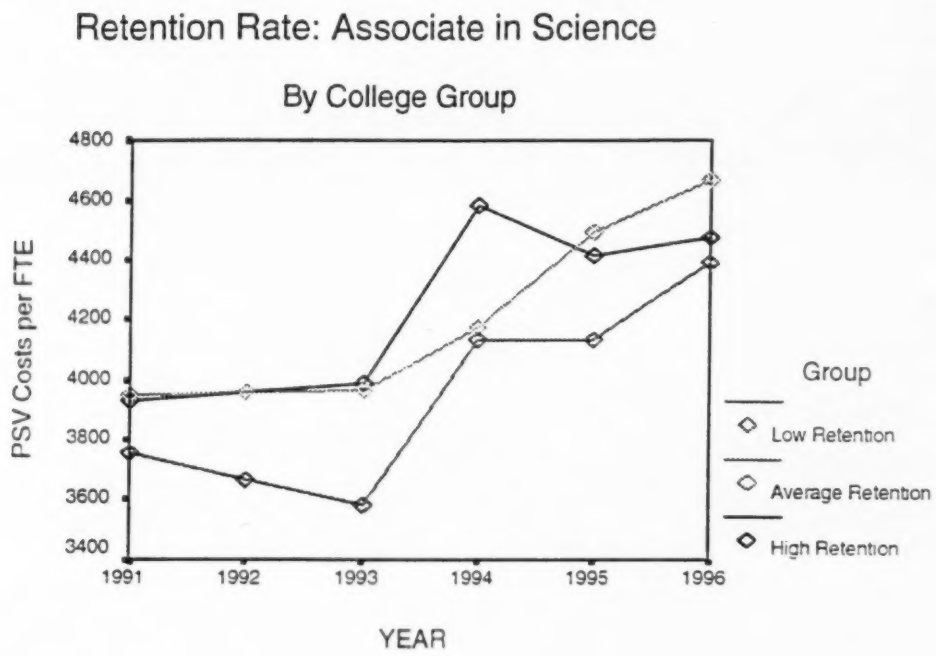
Figure 25

Retention and Success Rate: Associate in Science By PSV Costs per FTE By Group



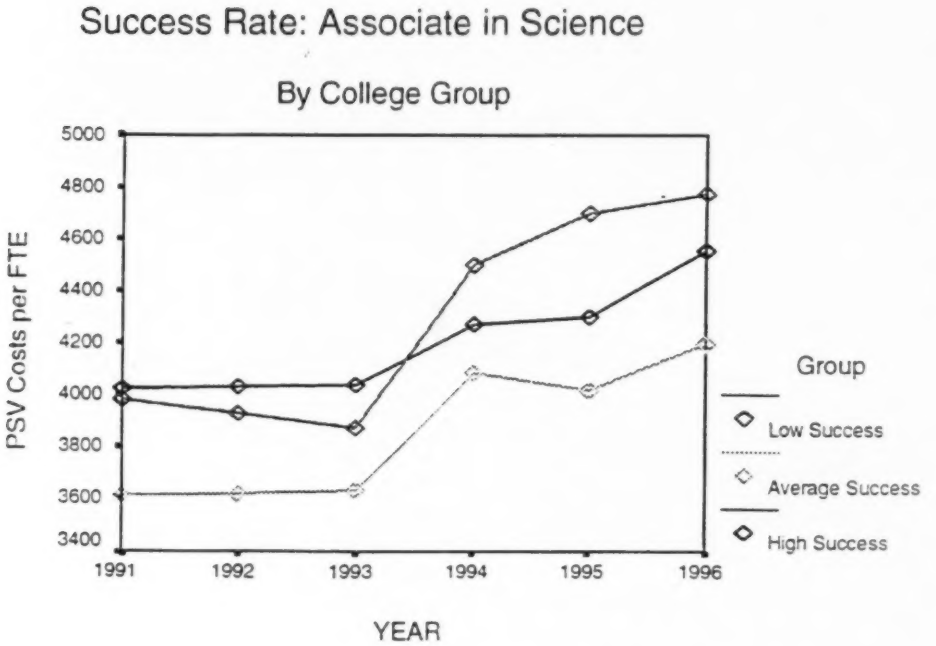
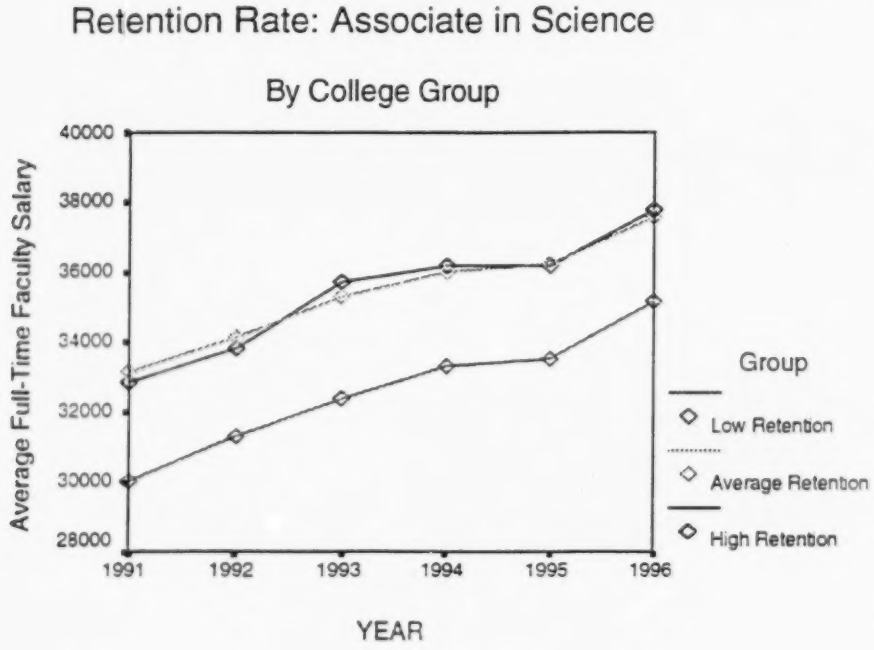


Figure 26

Retention and Success Rate: Associate in Science By Average Full-Time Faculty Salary By Group



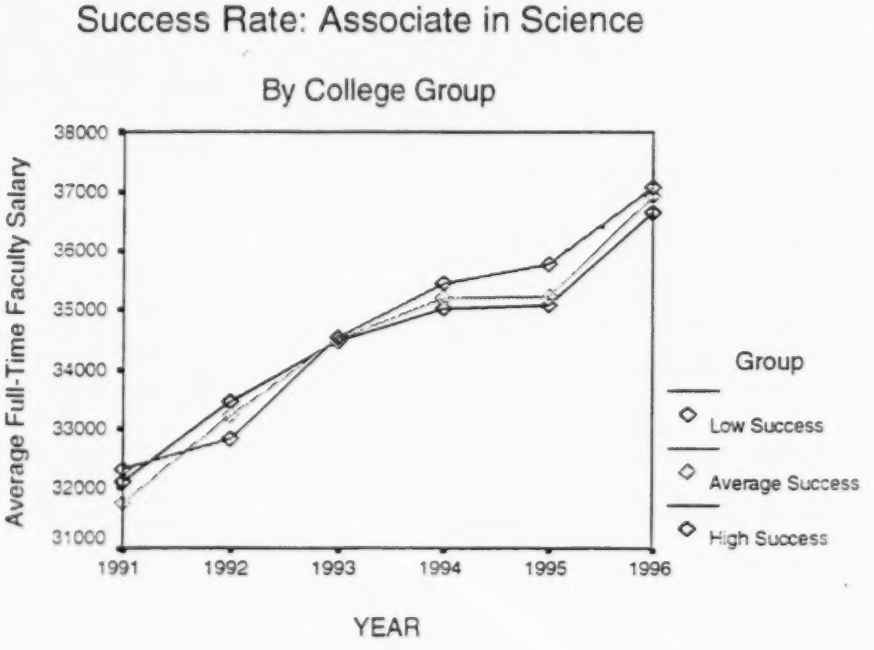
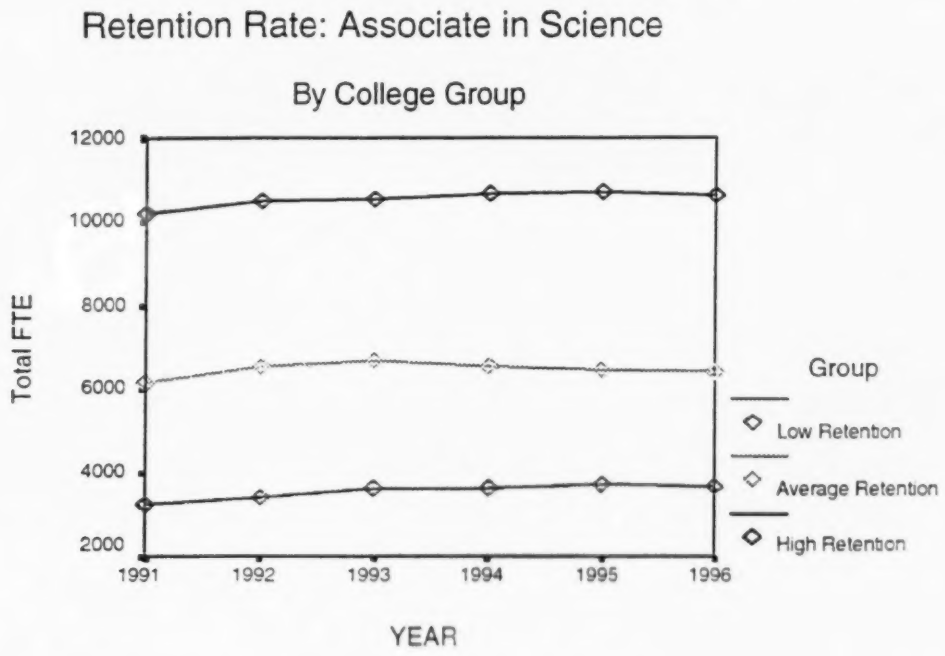


Figure 27

Retention and Success Rate: Associate in Science By of Total FTE By Group



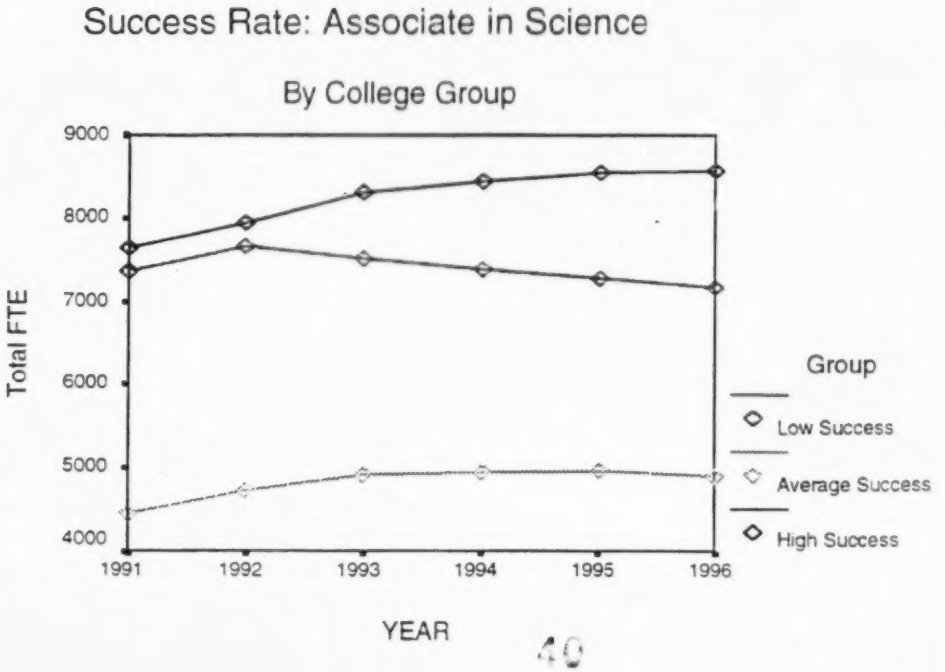
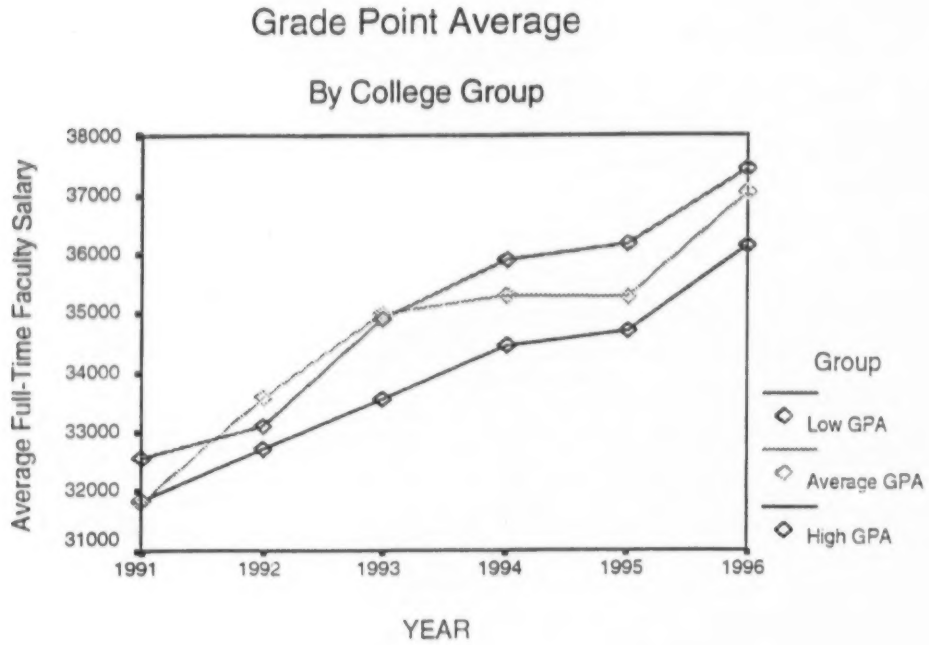


Figure 28
Associate of Arts Transfer Student Performance by Average Faculty Salary and Total FTE by Group



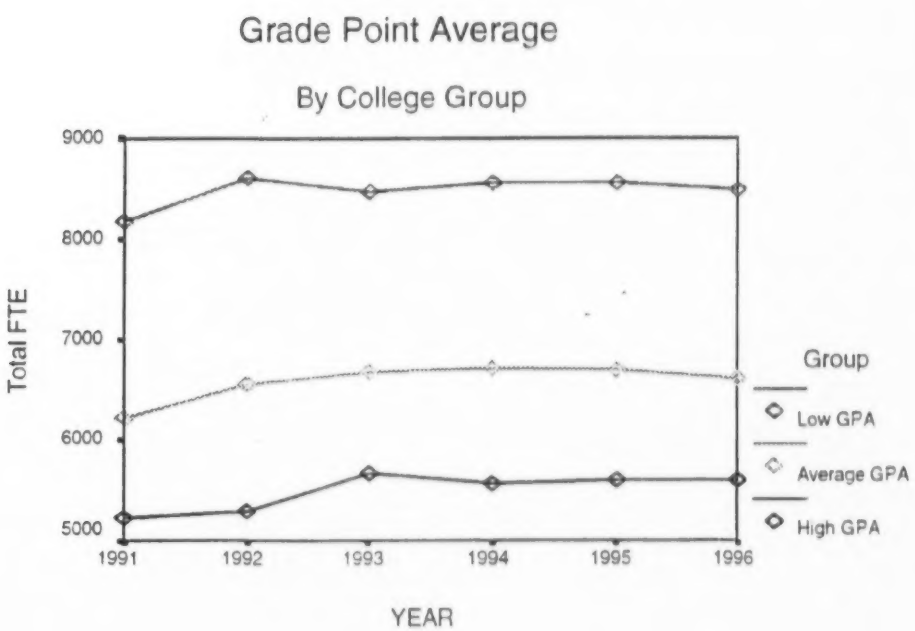
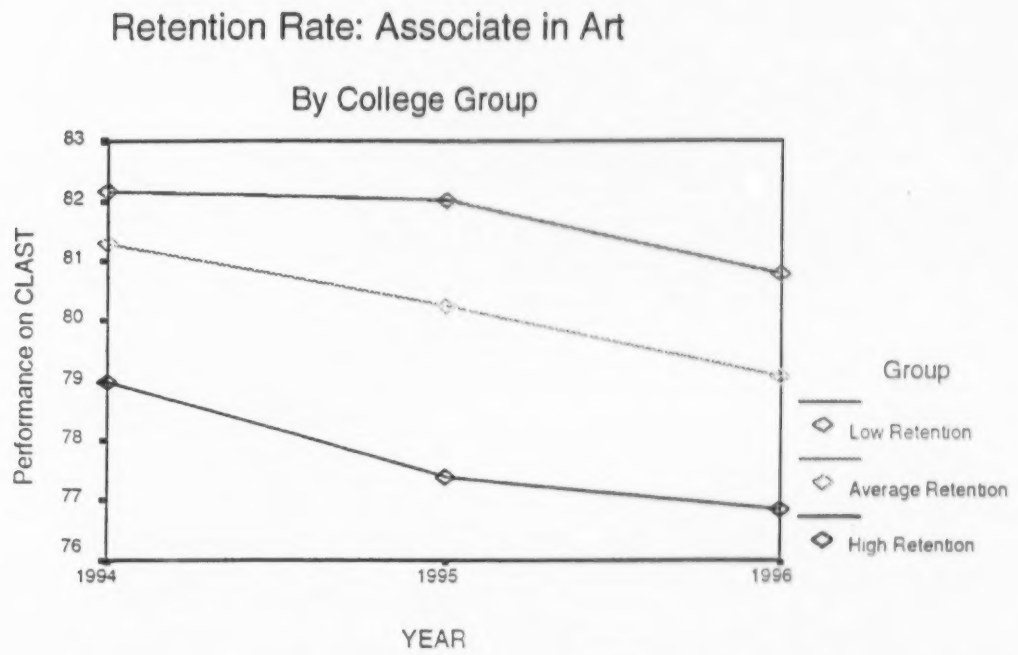


Figure 29
Retention and Success Rate: Associate in Arts by Performance on CLAST by Group



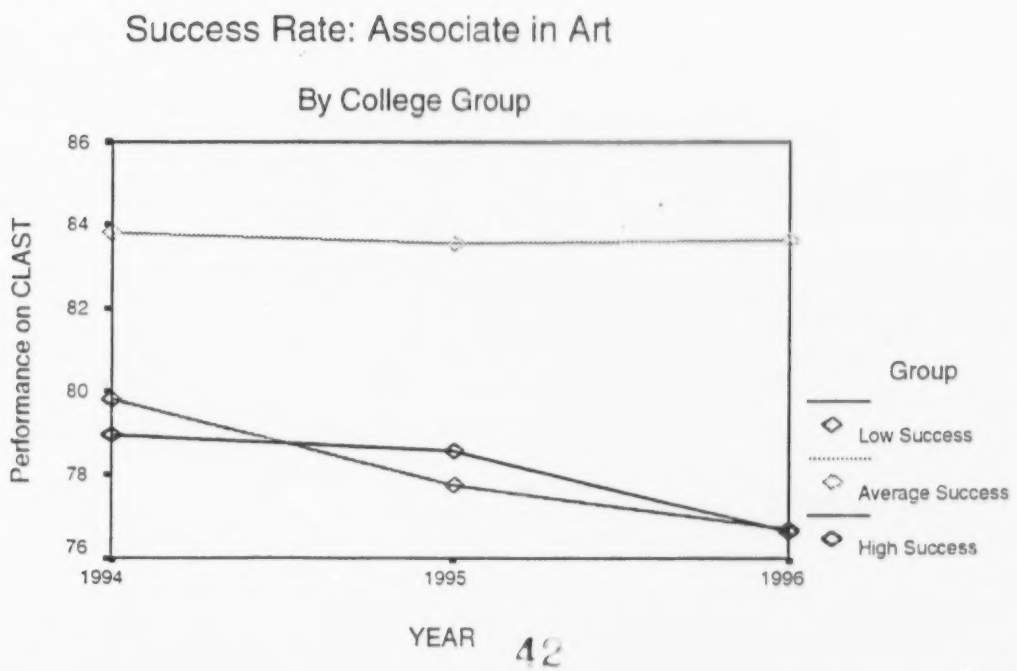
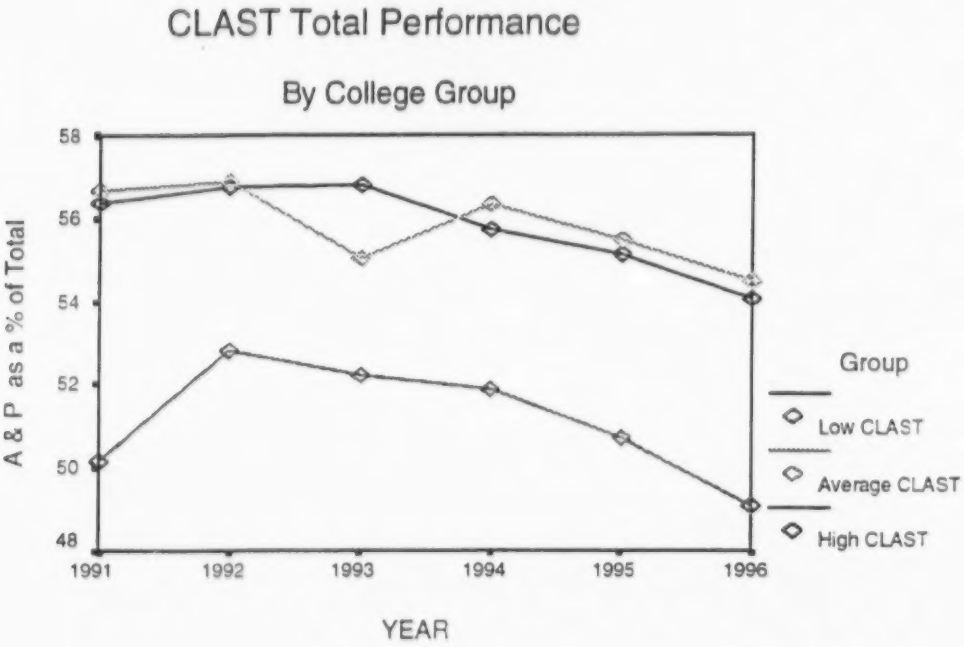


Figure 30
Associate in Arts CLAST Measure
Total A&P and Instructional Expenditures
as a Percent of Total by Group



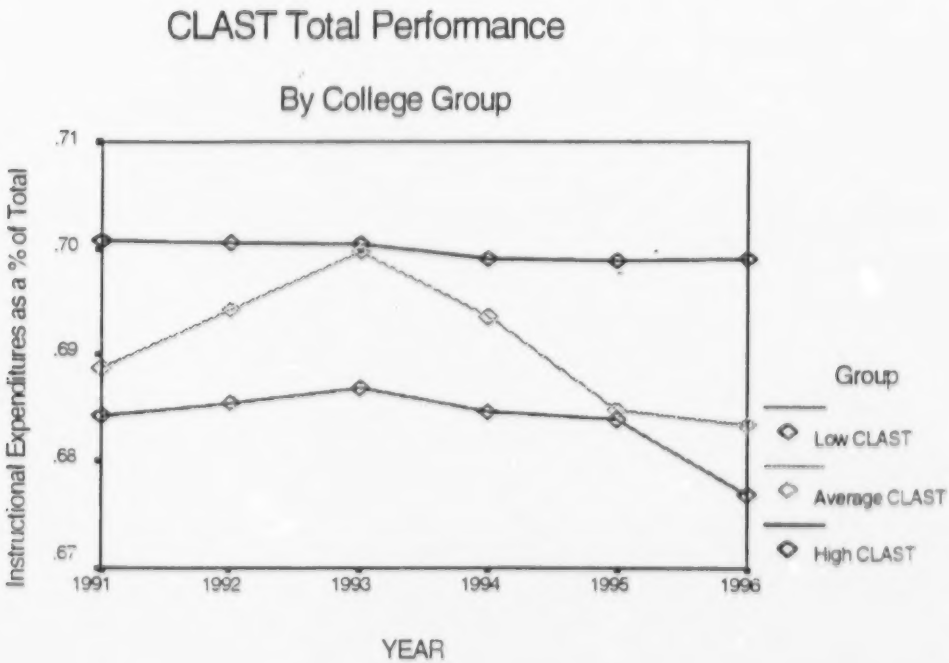
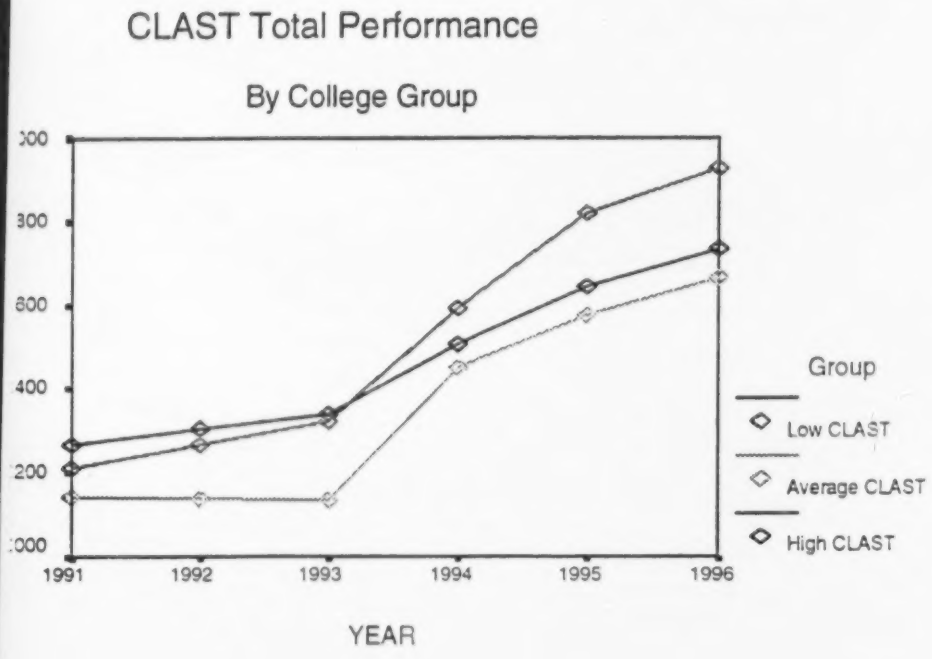


Figure 31
Associate of Arts CLAST Measure
P and College Preparatory Costs per FTE by Group



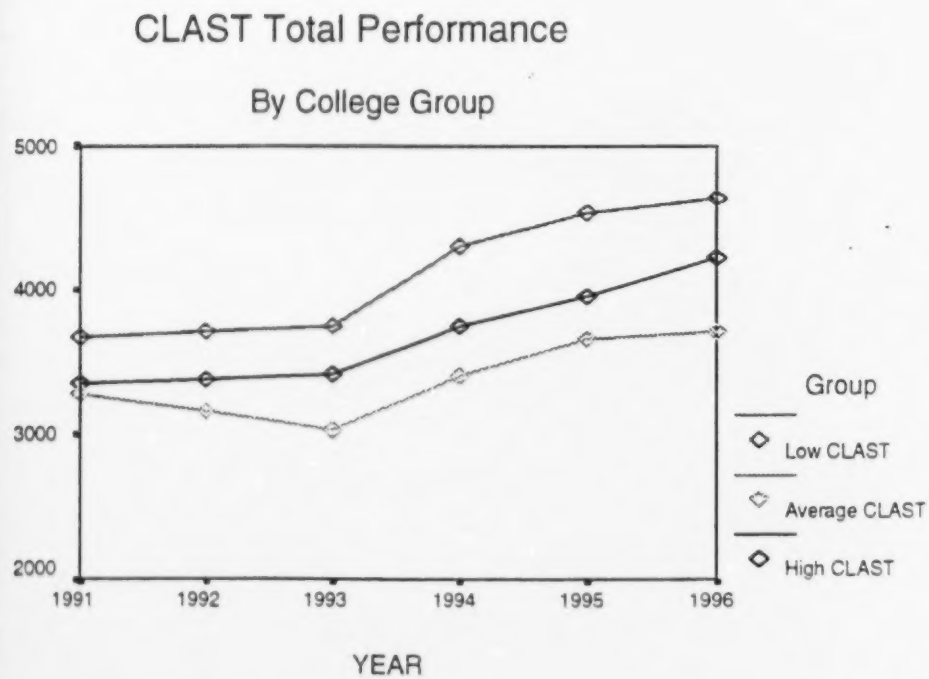


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Figure 32
Associate of Arts Retention Measure
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.424[a]	.179	.104	14.0450	.179	2.375	7	76	.030

a. Predictors: (Constant), AVGSAL, APPCT, APFC, TOTNIN, AP, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3279.339	7	468.477	2.375	.030[a]
	Residual	14991.857	76	197.261		
	Total	18271.196	83			

a. Predictors: (Constant), AVGSAL, APPCT, APFC, TOTNIN, AP, TOTINS, TOTAL

b. Dependent Variable: RRAA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-3.831	66.370		-.058	.954					
	AP	-5.14E-04	.001	-.126	-.409	.684	.364	-.047	-.042	.113	8.857
	APPCT	14.911	13.905	.139	1.072	.287	.095	.122	.111	.645	1.550
	TOTAL	1.085E-03	.001	.469	1.485	.142	.392	.168	.154	.108	9.237
	APFC	-5.30E-04	.004	-.016	-.144	.886	-.097	-.016	-.015	.850	1.176
	TOTINS	51.962	78.212	.123	.664	.508	.241	.076	.069	.314	3.187
	TOTNIN	30.598	49.161	.098	.622	.536	-.099	.071	.065	.435	2.300
	AVGSAL	1.135E-04	.001	.026	.191	.849	.257	.022	.020	.582	1.718

a. Dependent Variable: RRAA

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Figure 33
Associate of Arts Success Measure
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.426[a]	.182	.106	13.9509	.182	2.410	7	76	.028

a. Predictors: (Constant), AVGSAL, APPCT, APFC, TOTNIN, AP, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3282.990	7	468.999	2.410	.028[a]
	Residual	14791.656	76	194.627		
	Total	18074.646	83			

a. Predictors: (Constant), AVGSAL, APPCT, APFC, TOTNIN, AP, TOTINS, TOTAL

b. Dependent Variable: SRAA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	50.502	65.925		.766	.446					
	AP	-8.52E-04	.001	-.211	-.682	.497	-.102	-.078	-.071	.113	8.857
	APPCT	-1.521	13.812	-.014	-.110	.913	-.026	-.013	-.011	.645	1.550
	TOTAL	7.304E-04	.001	.317	1.006	.318	.180	.115	.104	.108	9.237
	APFC	-6.76E-03	.004	-.207	-1.843	.069	-.262	-.207	-.191	.850	1.176
	TOTINS	124.141	77.688	.296	1.598	.114	.335	.180	.166	.314	3.187
	TOTNIN	-11.250	48.852	-.036	-.230	.818	-.246	-.026	-.024	.435	2.300
	AVGSAL	-8.50E-04	.001	-.196	-1.440	.154	-.085	-.163	-.149	.582	1.718

a. Dependent Variable: SRAA

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Figure 34
Associate of Arts Success Measure
As a Percent of the Five Year Goal
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.419[a]	.176	.097	.14262	.176	2.225	7	73	.042

a. Predictors: (Constant), AVGSAL, APPCT, TOTNIN, APFC, AP, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.317	7	4.527E-02	2.225	.042[a]
	Residual	1.485	73	2.034E-02		
	Total	1.802	80			

a. Predictors: (Constant), AVGSAL, APPCT, TOTNIN, APFC, AP, TOTINS, TOTAL

b. Dependent Variable: GSRAA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.161	.680		.237	.813					
	AP	-6.83E-06	.000	-.167	-.529	.598	-.191	-.062	-.056	.113	8.841
	APPCT	-.118	.141	-.109	-.832	.408	-.132	-.097	-.088	.653	1.532
	TOTAL	8.437E-06	.000	.365	1.130	.262	.287	.131	.120	.108	9.256
	APFC	-1.76E-05	.000	-.054	-.468	.641	-.142	-.055	-.050	.850	1.176
	TOTINS	1.505	.811	.351	1.854	.068	.325	.212	.197	.314	3.181
	TOTNIN	.229	.500	.073	.457	.649	-.182	.053	.049	.442	2.265
	AVGSAL	-5.62E-06	.000	-.130	-.920	.361	.155	-.107	-.098	.569	1.757

a. Dependent Variable: GSRAA

Figure 35
Associate in Science Retention Measure
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.463[a]	.215	.139	11.8711	.215	2.852	7	73	.011

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, TOTNIN, PSV, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2813.135	7	401.876	2.852	.011[a]
	Residual	10287.308	73	140.922		
	Total	13100.443	80			

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, TOTNIN, PSV, TOTINS, TOTAL

b. Dependent Variable: RRAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-116.665	52.314		-2.230	.029			
	PSV	-1.35E-03	.002	-.139	-.587	.559	.253	-.069	-.061
	TOTAL	6.261E-04	.000	.314	1.255	.213	.304	.145	.130
	PSVPCT	16.955	23.546	.078	.720	.474	.053	.084	.075
	PSVFC	2.465E-03	.002	.148	1.390	.169	.066	.161	.144
	TOTINS	166.152	66.402	.440	2.502	.015	.248	.281	.260
	TOTNIN	111.542	41.220	.407	2.706	.008	.041	.302	.281
	AVGSAL	2.094E-04	.001	.057	.401	.690	.264	.047	.042

a. Dependent Variable: RRAS

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Figure 36
Associate in Science Measure
As a Percent of the Five Year Goal
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.441[a]	.194	.114	.22048	.194	2.414	7	70	.028

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, TOTNIN, PSV, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.821	7	.117	2.414	.028[a]
	Residual	3.403	70	4.861E-02		
	Total	4.224	77			

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, TOTNIN, PSV, TOTINS, TOTAL

b. Dependent Variable: GRRAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-.226	.980		-.231	.818			
	PSV	5.014E-05	.000	.282	1.136	.260	.108	.135	.122
	TOTAL	-1.12E-05	.000	-.313	-1.191	.238	.076	-.141	-.128
	PSVPCT	.496	.442	.124	1.124	.265	.077	.133	.121
	PSVFC	-6.19E-05	.000	-.207	-1.880	.064	-.264	-.219	-.202
	TOTINS	.281	1.250	.040	.224	.823	.023	.027	.024
	TOTNIN	1.355	.766	.273	1.769	.081	.178	.207	.190
	AVGSAL	2.044E-05	.000	.307	2.096	.040	.240	.243	.225

a. Dependent Variable: GRRAS

Figure 37

Licensure Pass Rate Measure
As a Percent of the Five Year Goal
ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.432[a]	.187	.105	6.51E-02	.187	2.296	7	70	.036

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, PSV, TOTNIN, TOTINS, TOTAL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.819E-02	7	9.741E-03	2.296	.036[a]
	Residual	.297	70	4.242E-03		
	Total	.365	77			

a. Predictors: (Constant), AVGSAL, PSVPCT, PSVFC, PSV, TOTNIN, TOTINS, TOTAL

b. Dependent Variable: GSLRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.403	.423		3.315	.001			
	PSV	-6.73E-06	.000	-.132	-.532	.596	.168	-.063	-.057
	TOTAL	2.495E-06	.000	.237	.903	.370	.213	.107	.097
	PSVPCT	7.842E-02	.130	.074	.603	.548	.180	.072	.065
	PSVFC	-3.05E-05	.000	-.335	-2.714	.008	-.333	-.309	-.293
	TOTINS	-.211	.450	-.112	-.470	.640	.245	-.056	-.051
	TOTNIN	-.460	.362	-.283	-1.273	.207	-.226	-.150	-.137
	AVGSAL	-3.96E-07	.000	-.020	-.134	.894	.158	-.016	-.014

a. Dependent Variable: GSLRP

Figure 38

Postsecondary Vocational Certificate Success Measure As a Percent of the Five Year Goal ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.518[a]	.269	.156	.24143	.269	2.389	6	39	.046

a. Predictors: (Constant), AVGSAL, PSAVFC, PSAVPCT, TOTAL, TOTNIN, PSAV

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.836	6	.139	2.389	.046[a]
	Residual	2.273	39	5.829E-02		
	Total	3.109	45			

a. Predictors: (Constant), AVGSAL, PSAVFC, PSAVPCT, TOTAL, TOTNIN, PSAV

b. Dependent Variable: GSRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-.246	.921		-.268	.790			
	PSAV	-1.13E-04	.000	-.211	-.816	.419	.248	-.130	-.112
	TOTAL	2.452E-05	.000	.409	1.637	.110	.073	.254	.224
	PSAVPCT	2.157	.931	.706	2.318	.026	.352	.348	.317
	PSAVFC	3.057E-05	.000	.108	.708	.483	.013	.113	.097
	TOTNIN	.286	1.572	.040	.182	.857	.146	.029	.025
	AVGSAL	1.982E-05	.000	.217	1.129	.266	.163	.178	.155

a. Dependent Variable: GSRP

Florida Community College Accountability Program Analysis
Variables and Analysis

Dependent Varables For 94, 95, 96

rraa = Associate in Arts Retention Measure
sraa = Associate in Arts Success Measure
rras = Associate in Science Retention Measure
sras = Associate in Science Success Measure
rrp = Postsecondary Vocational Certificate Retention Measure
srp = Postsecondary Vocational Certificate Success Measure
gpa = Associate in Arts Transfer Student Performance
slrp = Licensure Pass Rate Measure
vpp = Placement Rate Measure
cpsrr = College Preparatory Reading Performance Measure
cpsrw = College Preparatory Writing Performance Measure
cpsrm = College Preparatory Math Performance Measure
cpraa = College Preparatory Retention Measure
cpsaa = College Preparatory Success Measure
clastc = Associate in Arts CLAST Measure, College Preparatory Students
clastn = Associate in Arts CLAST Measure, Non-College Preparatory Students
clastp = Associate in Arts CLAST Measure, All Students
grraa = rraa as a percent of a five year goal
gsraa = sraa as a percent of a five year goal
grras =rras as a percent of a five year goal
gsras = sras as a percent of a five year goal
grrp = rrp as a percent of a five year goal
gsrp = srp as a percent of a five year goal
ggpa = gpa as a percent of a five year goal
gslrp = slrp as a percent of a five year goal
gvpp = vpp as a percent of a five year goal
gcpsrr = cpsrr as a percent of a five year goal
gcpsrw = cpsrw as a percent of a five year goal
gcpsrm = cpsrm as a percent of a five year goal
gcpaa = cpaa as a percent of a five year goal
gcpsaa = cpsaa as a percent of a five year goal
gclastc = clastc as a percent of a five year goal
gclastn = clastn as a percent of a five year goal
gclastp = clastp as a percent of a five year goal

Independent Variables For 91, 92, 93, 94, 95, 96

ap = Total advanced and professional FTE enrollment
psv = Total postsecondary vocational FTE enrollment
psav = Total adult postsecondary vocational FTE enrollment
prep = Total college preparatory FTE enrollment
total = Total institutional FTE enrollment
appct = Total advanced and professional FTE enrollment as a percent of Total FTE enrollment
psvpct = Total postsecondary vocational FTE enrollment as a percent of Total FTE enrollment
psavpct = Total adult postsecondary vocational FTE enrollment as a percent of Total FTE enrollmen
prepct = Total college preparatory FTE enrollment as a percent of Total FTE enrollment
apfc = Advanced and professional instructional full cost per FTE

psvfc = Postsecondary vocational instructional full cost per FTE
psavfc = Adult postsecondary vocational institutional full cost per FTE
prepfc = Total college preparatory institutional full cost per FTE
totins = Total instructional expenditures as a percent total expenditures by institution
totnin = Total non-instructional expenditures as a percent total expenditures by institution
avgsal = Average salary of full time instructional personnel calculated as a 2.0 semester equivalent by institution

From the dependent variable set run as indpendent variables For 94, 95, 96?

rraa
sraa
cpsrr
cpsrw
cpsrm

Program mix = appct, psvpct, psavpct, prepct

Program full costs = apfc, psvfc, psavfc, prepfc

Institutional expense = totins, totnin, avgsal

Academic measures related to academic outcomes = rraa, sraa, cpsrr, cpsrw, cpsrm

Dependent Variables for 94
Independent Variables = 91, 92, 93, 94

Dependent Variables for 95
Independent Variables = 92, 93, 94, 95

Dependent Variables for 96
Independent Variables = 93, 94, 95, 96

FTE or size of institution or program =
ap, psv, psav, prep, total

Overall Research Questions?

1. Are we making progress toward the goals on the 17 accountability measures at the institutional level from a system perspective?
2. At the institutional level, are scores increasing on the 17 accountability measures?
3. What are the institutional attributes that account for the difference among institutions in progress toward goal?
4. What are the institutional attributes that account for the difference among institutions on score meaures for the 17 accountability measures?

Anaylsis #1

Box plots on the 17 accountability measures for all insitutions across 94, 95, 96.

Analysis #2

Box plots on progress toward goal for the 17 accountability measuresfor all institutions across 94, 95, 96.

Analysis #3

Dependent variable = rraa, sraa, grraa, gsraa

Independent variables = ap, appct, apfc, avgsal, total, totins, totnin

Analysis #4

Dependent variable = rras, sras, slrp, grras, gsras, gslrp

Independent variables = psv, psvpct, psvfc, avgsal, total, totins, totnin

Analysis #5

Dependent variable = rrp, sras, srp, grrp, gsrp,

Independent variables = psav, psavpct, psavfc, avgsal, total, totins, totnin

Analysis #6

Dependent variable = vpp, gvpp,

Independent variables = psv, psav, psvpct, psavpct, psvfc, psavfc, avgsal, total, totins, totnin

Analysisi #7

Dependent variable = gpa

Independent variables = ap, appct, apfc, avgsal, total, totins, totnin, rraa, sraa,

Analysis #8

Dependent variable = clastn, clastp, gclastn, gclastp

Independent variables = ap, appct, apfc, avgsal, total, totins, totnin, rraa, sraa,

Analysis #9

Dependent variable =cpsrr, cpsrw, cpsrm, gcpsrr, gcpsrw, gcpsrm

Independent variables = prep, prepct, prepfc, avgsal, total, totins, totnin

Analysis #10

Dependent variable =cpraa, cpsaa, clastc, gcpraa, gcpsaa, gclastc

Independent variables = ap, prep, appct, prepct, apfc, prepfc, avgsal, total, totins, totnin, cpsrr, cpsrw, cpsrm